



County Borough



of Blackpool.

ANNUAL REPORT

FOR THE YEAR 1913,

BY

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Medical Superintendent to the Infectious Diseases Hospital.*

Blackpool :

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1914.

HEALTH COMMITTEE.

1913.

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"	DAWSON	"	HOLT
"	"	"	"
"	EAVES, J.P.	"	INGHAM
"	"	"	"
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"	J. R. GATH	"	MASHETER
Mr. Councillor TOMLINSON.			

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Mr. Councillor	CARTLEDGE	"	"
		"	FENTON

*To the Chairman and Members of the Health
Committee of the Blackpool Corporation.*

GENTLEMEN,—

I beg to submit herewith my Annual Report for the year 1913 upon the Vital Statistics and General Sanitary Conditions in Blackpool.

I must apologize for its unusually late issue, but the amount of work which has devolved upon my Department in connection with the Congress of the Royal Sanitary Institute has contributed to the delay. As the circumstances are not likely to recur I am able to promise a much earlier report in future years.

You will observe that the number of inhabited houses continues to increase, the 1913 figure being 575 in excess of that for 1912.

The warm dry summer of 1913 caused a rise in our Infantile Mortality rate and this again was reflected in an increased general death rate. I have made a lengthy report upon this matter, to which I would draw your special attention.

My observations upon the Census Returns, in so far as they affect Blackpool are also of interest.

The incidence of Infectious Disease was not unsatisfactory.

The work in connection with the administrative control of Tuberculosis has proceeded during the year, and though the period of time during which this work has been in progress is too short to have any effect upon statistics I am confident that much good has been done. Several patients have after a course of treatment been enabled to resume work. Arrangements for the provision of a fully equipped Curative Sanatorium for Blackpool are in progress.

General Departmental Work has continued as in former years. Our position with regard to Offensive Grades is strengthened, and I beg to refer you to my observations upon the subject and also the question of Boracic Acid in food, and the milk supply.

I beg to remain, Gentlemen,

Your faithful Servant,

E. W. REES JONES.

July, 1914.

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PRELIMINARY. A circular from the Local Government Board, dated December, 1913, deals with the subject of the Annual Health Reports. It states that these reports, being for the information of the Board and County Council as well as the local Council, there should be in each report a detailed statement of all local circumstances, and while these details may seem superfluous for the latter they may often be needed by the former bodies. This circular specifies the following subjects upon which, amongst others, remarks should be made:—Physical features, chief occupations, house accommodation, water supply (with special comments on plumbo-solvency), milk supply, food supply, sewerage and drainage, scavenging, disposal of sewage, nuisances, bye-laws, sanitary conditions of schools, infectious disease, the control of tuberculosis, infant mortality, medical inspection of school children, vital statistics, &c.

AREA. The Municipal Borough of Blackpool comprises the township of Layton-with-Warbreck, part of the township of Marton, and that part of the township of Bispham-with-Norbreck known as Bispham Hawes. The following is the area of the Wards exclusive of the foreshore:—Claremont 707 acres, Talbot 447 acres, Bank Hey 55½ acres, Brunswick 577½ acres, Foxhall 731 acres, and Waterloo 1,004 acres.

DENSITY OF POPULATION. The mean density of population for the whole Borough is equal to 18.22 persons per acre:—In Claremont Ward it is 16.53; Talbot Ward, 29.78; Bank Hey Ward, 33.37; Brunswick Ward, 16.24; Foxhall Ward, 26.45; and Waterloo Ward, 8.58.

ELEVATION. The mean elevation of the Borough is about 28½ feet above sea level, and varies between about 97 feet at Warbreck Hill, and about 9½ feet in the field north of Bloomfield Road (West).

Blackpool presents the curious condition that the main direction of the natural drainage is away from the sea. Commencing at the north end, there is a depression near the Gynn Inn, not extending far inland, and then the land rises to the top of Warbreck Hill, with a

short slope towards the sea, and a longer slope inland. There is a long slope also in a southerly direction to about the Manchester Hotel, where the main sewer outfall is situated. South of this, to the boundary between Blackpool and St. Annes, the surface is very flat, and averages only about 20 feet above sea level. The main natural drainage of the northern part of the Borough is by means of a water-course, known as the Layton Dyke (for part of its course the boundary between Blackpool and Hardhorn), into Marton Mere, and thence into the Wyre, and thus into the sea at Fleetwood.

GEOLOGY. The town may be roughly divided into two portions; the first being that north of the Central Station, and having a subsoil of glacial boulder clays, the two beds being separated by sands and shingle, together at Norbreck reaching more than 100 feet in thickness, and resting on an ancient plane of marine denudation cut in the new red marls which, east of Fleetwood, are salt bearing, the rock salt being thicker than any in Cheshire. The second, which lies south of the Central Station, consists of peat, lying on the glacial drift. This bed of peat is of varying thickness of 10, 20, or even 30 feet, being overlain with a greater or less thickness of blown sand. North of Blackpool it re-appears at Rossall, and is associated with a submerged forest.

The boulder clay subsoil extends beneath Claremont, Talbot, Bank Hey, and a portion of Brunswick Ward, and also the easterly portion of Foxhall Ward. The portion of Brunswick Ward from the Central Station to Princess Street, and to a short distance east of the coast railway line, has a peaty subsoil, which, in this locality, comes nearly to the surface, and is of variable depth, rendering the ground very treacherous in places. The remainder of Foxhall and Waterloo Wards has a good depth of blown sand overlying the peat, except in isolated places. In parts of this portion of the Borough the sand is very fine, and in the ground it has almost the consistency of mortar.

SEWERAGE. The district is drained as follows:—

(i.) By the chief system of sewers which drains by gravitation the Borough except those portions mentioned below. This empties

into a large sewer chamber, under Rigby Road and Tyldesley Road, which is egg-shaped, being thirteen feet in vertical diameter, and nine feet across at its widest part.

The Lytham Road Sewer, which is, for about one-third of its length at the lower end, a 3ft. by 2ft. 6in. brick culvert, and at its upper end a pipe sewer varying from 15in. to 12in., enters this chamber from the south, and the Bonny Street culvert enters it from the north, as well as the old culvert beneath the Promenade, whilst the inland main sewer empties into it from the east.

(ii.) A small sewerage system carries the sewerage from Little Layton by gravitation into a tank situated in a field east of the Cemetery, whence it is pumped into the terminus of the inland main sewer in Layton Lane, down which it flows by gravitation.

(iii.) The drainage from the district east of the portion of Lytham Road south of the South Shore Station, and east of the railway line south of the Destructor, extending inland to Middle Lane and Central Drive, flows by gravitation to a tank at the Destructor, whence it is pumped into a new sewer chamber under the extension of Rigby Road, connected to the old one, whence sewage can flow by gravitation to the sea.

(iv.) The district east of Middle Lane and south of Waterloo Road is drained by gravitation to a pumping station at the corner of Waterloo Road and Bloomfield Road, whence it is pumped into the tank at the Destructor mentioned under (iii.)

Iron and steel outfall pipes, each three feet in diameter, are laid down seawards for a distance of 950 lineal yards from high-water mark, the sewage, after being screened through electrically operated fine screens by which all the gross solids are removed from the sewage, is discharged through the northerly pipe, and the Spen Dyke surface water discharged through the southerly one. Valves fixed in a pen-stock chamber, beneath the Promenade, serve to keep all sea water from the sewage chambers and sewers whilst the outfall is tide-locked. Sewage is discharged immediately the level of the sea

is below the level of the sewage in the storage chamber, until $1\frac{1}{2}$ hours before time of low water, when the valves are again closed. Both the Sewer outfall and the Spen Dyke surface water outfall terminate seaward, at a depth of about five feet below the lowest level of low water of a high spring tide.

During the re-construction of the pen-stock chamber necessitated by the widening of the Promenade, storm overflow pipes were provided to relieve the sewage chambers during heavy rains with an incoming tide, and also a pumping chamber, if required, for use when the sewerage system is full at high tide.

(v.) A smaller system takes the sewage from a portion of Claremont Park, and from an estate in Claremont Ward, which contains Cheltenham, Chesterfield, Clifford, Carshalton, and Handsworth Roads, &c., and also from a portion of the Gynn Estate, outside the Borough, in the district of Bispham. This sewage flows by gravitation to an outfall at the Gynn, which extends seawards to a distance of 660 yards. This outlet was recently extended 200 yards seawards, and a screening apparatus has been installed similar to the one opposite Rigby Road. The sewage discharges at all states of the tide.

SEWER VENTILATION. There is no complete system of Sewer Ventilation in the Borough, but I am informed by the Borough Surveyor that good progress has been made with a system of ventilating the sewers by means of tall columns 30 to 40 feet in height, placed at intervals of about 200 yards, and in such positions as not to be a nuisance or injurious to the inhabitants of adjacent houses. Practically all the surface ventilators have been closed.

COLLECTION OF EXCRETA AND HOUSEHOLD REFUSE. Blackpool is almost entirely a water carriage town. There are no cesspools or pail closets or privies in any of the inhabited parts, but on the outskirts there are a few of these. On the extension of the sewerage system they are being gradually abolished. The cesspools and privies are emptied and cleaned at least once a week in all parts of the Borough where they exist,

With regard to household refuse, galvanised iron bins with tight-fitting covers are the most satisfactory of all forms of receptacles, and these are the forms which are being encouraged by my department. I am informed by the Cleansing Superintendent that during the season a daily collection was carried out at the Hotels, Hydros, Restaurants, and the larger Boarding-houses, whilst from the ordinary Company-houses the refuse is removed from two to three times a week. With a slight modification requisite for meeting the reduced demand in connection with Company-houses, this system is maintained during the winter months. The refuse collected is dealt with at the Destructor, and during the year 20,170 tons were destroyed.

WATER SUPPLY. This is under the jurisdiction of the Fylde Water Board, a body composed of representatives from Blackpool, Lytham, St. Annes, and Fleetwood. The water is an upland surface water, of a soft and peaty nature, and is now laid on to every inhabited part of the Borough. The gathering ground is a good one, and is thoroughly safeguarded from all risk of animal pollution.

County Borough of Blackpool.



STATISTICAL SUMMARY, 1913.

SITUATION: Latitude, 53° 49' N.; Longitude, 3° 3' W.

Area of Borough (exclusive of foreshore)	3,522 acres	
Area of foreshore	721 acres	
Population (Census, 1st April, 1911)	58,371 persons	
Persons per House as per Census	4.439	
	1912.	1913.
Rateable value (General District Rate) ...	£535,811	£552,721
Do. (Borough Rate)	£546,197	£563,083
Number of dwelling-houses on rate book...	14,491	14,905
Do. do do empty	282	121
Population of residents estimated at middle of year from number of inhabited houses	62,125	64,186
Density of Population (persons per acre)...	17.64	18.22
Number of births	963	1,043
Birth Rate (per 1,000 inhabitants).....	15.50	16.25
Number of deaths of residents.....	753	914
Death Rate	12.12	14.24
Death Rate (corrected for age and sex distribution; factor for 1911 Census 1.0019)	12.14	14.27
Number of deaths of children under one year of age	85	131
Infantile mortality	88.26	125.6

REPORT.

PART I.—VITAL STATISTICS.

Population.—I have estimated the population at the middle of 1913 to be 64,186. This figure is obtained by multiplying the actual number of inhabited houses by the average number of persons per house as obtained at the last Census. The estimate is somewhat in excess of that of the Registrar-General, but having regard to the extreme fluctuations in our population at varying periods of the year I feel confident that statistics calculated upon a population of 64,186 will reveal the true mortality of the district.

I am indebted to the Borough Treasurer for supplying me with information as to the number of inhabited and uninhabited houses in each of the wards during the winter enumeration, lasting from the 12th to the 15th of December, 1913. The figures are as follows :—

WARD.	NUMBER OF HOUSES.		
	Empty.	Inhabited.	Total.
Claremont	20	2,758	2,778
Talbot	11	2,867	2,878
Bank Hey	—	372	372
Brunswick	17	2,146	2,163
Foxhall	32	4,654	4,686
Waterloo.....	41	1,987	2,028
Totals.....	121	14,784	14,905

It will be of interest to compare the total number of houses for the year with the corresponding numbers for previous years:—

NUMBER OF HOUSES.

	Empty.	Inhabited.	Total.
1913	121	14,784	14,905
1912	282	14,209	14,491
1911	298	13,714	14,012
1910	207	13,361	13,568
1909	200	12,994	13,194
1908	171	12,607	12,778
1907	153	12,334	12,487
1906	191	12,053	12,244
1905	188	11,789	11,977
1904	272	11,494	11,766
1903	309	11,181	11,490

It will be observed that the increase in the total number of houses is 414, the increase in the total number of inhabited houses is 575, and there were 161 fewer empty houses. These figures denote the very satisfactory condition of the prosperity of the town.

The ward populations, calculated on the ratio of persons per house, are as follows:—

Claremont	11,688
Talbot	13,314
Bank Hey	1,852
Brunswick	9,376
Foxhall	19,334
Waterloo	8,622
Total.....	<u>64,186</u>

It will be remembered that the preliminary report of the Census 1911 gave the population of Blackpool as follows :—

Males	25,420
Females	32,956
Total.....	<u>58,376</u>

The continuous increase in the growth of the town is revealed in the figures of previous Censuses as follows :—

Census.	Population.	Actual increase.	Percentage increase.
1831.....	944		
1841.....	2,168	1,224	129·7
1851.....	2,503	335	15·5
1861.....	3,908	1,405	56·1
1871.....	7,092	3,184	81·5
1881.....	12,710	5,618	79·2
1891.....	21,970	9,260	72·1
1901.....	47,348	25,378	115·5
1911.....	58,376	11,028	23·29

The percentage increase in Blackpool compares very favourably with other County Boroughs, and a few examples are :—

Town.	Percentage increase.	Town.	Percentage increase.
Bath... ..	1·79	Lincoln	17·44
Birkenhead	17·96	Liverpool... ..	6·03
Blackburn	2·98	Manchester	10·79
Bolton	7·93	Oldham	7·47
Bournemouth	31·65	Oxford	7·53
Brighton	6·29	Preston	3·65
Chester	1·90	Reading	4·15
Coventry... ..	52·01	St. Helens	14·40
Croydon	26·64	Southport	7·42
Eastbourne	20·59	Warrington	12·35
Exeter	3·13	Wigan	8·18
Ipswich	10·97	York... ..	5·63
Leeds	3·87	England and Wales..	10·9
Leicester... ..	7·40		

The population in England and Wales generally is gradually becoming more urban and less rural in character, and this is revealed in the following table :—

England and Wales.	1881.		1891.		1901.		1911.
Urban	67·9	....	72·0	....	77·0	....	78·1
Rural	32·1	....	28·0	....	23·0	....	21·9
	<u>100</u>		<u>100</u>		<u>100</u>		<u>100</u>

In order to demonstrate the cosmopolitan nature of Blackpool I have extracted from the various Blue Books on the Census the following information :—

CENSUS 1911.

I.—BIRTHPLACES OF PERSONS RESIDENT IN BLACKPOOL.

BIRTHPLACE.	MALES.	FEMALES.
Bedfordshire	25	20
Berkshire	15	12
Buckinghamshire	24	29
Cambridgeshire (including the Isle of Ely)	43	53
Cheshire (Administrative County)	582	884
(Birkenhead, C.B.)	41	69
(Chester, C.B.)	47	38
(Stockport, C.B.)	104	131
Cornwall	17	34
Cumberland	168	330
Derbyshire (Administrative County)	221	393
(Derby, C.B.)	41	54
Devonshire	38	47
Dorsetshire	14	12
Durham	103	139
Essex	29	38
Gloucestershire	82	96
Herefordshire	20	45

BIRTHPLACE.	MALES.	FEMALES.
Hertfordshire	10	30
Huntingdonshire	6	12
Kent	50	56
Lancashire (Administrative County) ...	4,244	5,318
(Barrow-in-Furness, C.B.) ...	72	96
(Blackburn, C.B.)	636	810
(Blackpool, C.B.)	7,470	7,493
(Bolton, C.B.)	419	591
(Bootle, C.B.)	7	15
(Burnley, C.B.)	360	493
(Bury, C.B.)... ..	206	276
(Liverpool, C.B.)	355	608
(Manchester, C.B.)... ..	1,536	2,237
(Oldham, C.B.)	463	659
(Preston, C.B.)	596	585
(Rochdale, C.B.)	322	482
(St. Helens, C.B.)	66	140
(Salford, C.B.)	313	429
(Southport, C.B.)	99	104
(Warrington, C.B.)	31	61
(Wigan, C.B.)	123	143
Leicestershire	91	130
Lincolnshire	136	212
London	280	359
Middlesex	21	22
Monmouthshire	15	24
Norfolk (Administrative County) ...	48	63
(Great Yarmouth, C.B.)	7	7
Northamptonshire	52	65
Northumberland	50	68
Nottinghamshire (Administrative County).	62	119
(Nottingham, C.B.)	65	72
Oxfordshire	18	20
Rutlandshire	3	4
Shropshire	125	335
Somersetshire	21	40

BIRTHPLACE,	MALES.	FEMALES.
Southampton	38	37
Staffordshire	440	1059
Suffolk	31	46
Surrey	29	32
Sussex (East and West)	19	19
(Brighton, C.B.)	12	22
(Eastbourne, C.B.)... ..	1	1
(Hastings, C.B.)	4	2
Warwickshire (Administrative County)	66	120
(Birmingham, C.B.)	128	219
(Coventry, C.B.)	19	21
Westmoreland	144	174
Wiltshire	16	25
Worcestershire	82	164
Yorkshire (East, North, and West Ridings) 1,789	.....	2,696
(Bradford, C.B.)	279	357
(Halifax, C.B.)	294	398
(Huddersfield, C.B.)	247	399
(Kingston - upon - Hull, C.B.)	39	61
(Leeds, C.B.)	290	442
(Middlesbrough, C.B.)	25	49
(Rotherham, C.B.)... ..	21	79
(Sheffield, C.B.)	183	344
(York, C.B.)... ..	30	42
England (County not stated)	12	11
Glamorganshire (Cardiff, C.B.)	12	9
(Merthyr, C.B.)	1	8
(Swansea, C.B.)	6	13
Wales (Remainder of)... ..	110	265
Scotland	265	305
Ireland	279	376
Isle of Man and Channel Islands	42	67
British Colonies or Dependencies:—		
Europe	4	3
Asia	28	22

BIRTHPLACE.	MALES.	FEMALES.
Africa... ..	19	23
America	20	27
Australasia	17	16
Foreign Countries :—		
*British Subjects	51	96
*Naturalised British Subjects ...	30	14
*Foreigners	185	82
(* SEE TABLE ON OPPOSITE PAGE.)		
At Sea	4	7
Birthplace not stated	122	192
<hr/>		
Total	25,425	32,946

11.—BIRTHPLACES OF PERSONS BORN IN FOREIGN COUNTRIES AND RESIDENT IN BLACKPOOL.

	British Subjects.		Naturalised British Subjects.		Foreigners.	
	Males.	Females.	Males.	Females.	Males.	Females.
EUROPE—						
Austria ...	—	2	2	1	15	3
Belgium ...	—	2	—	1	5	5
France ...	—	5	—	1	15	2
Germany ...	2	7	8	2	44	19
Italy ...	1	1	—	1	18	13
Russia ...	8	11	13	5	11	5
Russian Poland	2	—	4	2	5	8
Switzerland ...	—	1	—	—	17	5
Turkey ...	1	1	1	—	12	3
Rest of ...	1	1	—	—	19	10
ASIA ...	—	1	—	—	1	—
AFRICA ...	—	—	1	1	8	1
AMERICA—						
Brazil... ..	3	7	—	—	2	—
U.S.A. ...	25	50	—	—	13	7
Rest of ...	8	6	—	—	—	1
BORN ABROAD ...	—	1	1	—	—	—
AT SEA ...	4	7	—	—	—	—
TOTAL ...	55	103	30	14	185	82

CENSUS 1911.**III.—PLACES OF RESIDENCES OF PERSONS BORN IN
BLACKPOOL.**

PLACE OF RESIDENCE.						MALES.	FEMALES.
Bedfordshire	...	...	...	...	...	5	5
Berkshire...	...	...	...	...	...	5	3
Buckinghamshire	...	...	...	...	...	8	10
Cambridgeshire...	...	...	...	...	...	6	2
Cheshire (Administrative County)...	...	...	...	...	...	131	156
(Birkenhead, C.B.)	...	...	...	...	...	28	24
(Chester, C.B.)	...	...	...	...	...	4	3
(Stockport, C.B.)	...	...	...	...	...	30	27
Cornwall...	...	...	...	...	...	5	3
Cumberland	...	...	...	...	...	25	23
Derbyshire	...	...	...	...	...	33	43
Devonshire	...	...	...	...	...	16	9
Dorsetshire	...	...	...	...	...	2	3
Durham	...	...	...	...	...	41	38
Essex	...	...	...	...	...	35	31
Gloucestershire...	...	...	...	...	...	11	23
Herefordshire	...	...	...	...	...	5	11
Hertfordshire	...	...	...	...	...	7	9
Huntingdonshire	...	...	...	...	...	1	1
Kent	...	...	...	...	...	38	24
Lancashire (Administrative County)	...	...	...	...	...	1,417	1,544
(Barrow-in-Furness, C.B.)	...	...	...	...	...	51	51
(Blackburn, C.B.)	...	...	...	...	...	110	137
(Blackpool, C.B.)	...	...	...	...	...	7,470	7,493
(Bolton, C.B.)	...	...	...	...	...	120	125
(Bootle, C.B.)	...	...	...	...	...	11	12
(Burnley, C.B.)	...	...	...	...	...	52	76
(Bury, C.B.)...	...	...	...	...	...	29	29
(Liverpool, C.B.)	...	...	...	...	...	125	137
(Manchester, C.B.)...	...	...	...	...	...	338	410
(Oldham, C.B.)	...	...	...	...	...	64	78
(Preston, C.B.)	...	...	...	...	...	166	226

PLACE OF RESIDENCE.	MALES.	FEMALES.
(Rochdale, C.B.)	41	51
(St. Helens, C.B.)	14	16
(Salford, C.B.)	97	93
(Southport, C.B.)	32	40
(Warrington, C.B.)	8	5
(Wigan, C.B.)	21	13
Leicestershire	19	22
Lincolnshire	10	15
London (Administrative County)	116	129
Middlesex (Administrative County).. ..	30	39
Monmouthshire	5	8
Norfolk	7	5
Northamptonshire	5	11
Northumberland (Administrative County)	9	6
(Newcastle, C.B.)	14	16
Nottinghamshire (Administrative County).	22	10
(Nottingham, C.B.)	12	14
Oxfordshire	3	4
Rutlandshire	1	—
Shropshire	13	27
Somersetshire	10	9
Southampton	19	36
Staffordshire	83	73
Suffolk	5	3
Surrey	27	19
Sussex (Administrative County)	6	7
(Brighton, C.B.)	4	11
(Eastbourne, C.B.)... ..	1	1
(Hastings, C.B.)	2	6
Warwickshire (Administrative County) ...	16	17
(Birmingham, C.B.)	25	25
Westmoreland	12	14
Wiltshire	2	2
Worcestershire	23	19
Yorkshire (Administrative County).. ..	204	179
(Bradford, C.B.)	39	62

PLACE OF RESIDENCE.				MALES.		FEMALES.	
(Halifax, C.B.)	...	...	...	20	.....	34	
(Huddersfield, C.B.)	...	...	...	31	.....	29	
(Kingston - upon - Hull, C.B.)	...	...	...	13	.....	11	
(Leeds, C.B.)	...	...	...	39	.....	70	
(Middlesbrough, C.B.)	...	...	...	2	.....	6	
(Rotherham, C.B.)...	...	...	...	5	.....	4	
(Sheffield, C.B.)	...	...	...	34	.....	43	
(York, C.B.)...	...	...	...	5	.....	4	
Glamorganshire	...	...	...	24	.....	24	
Other Welsh Counties...	...	...	...	32	.....	50	
Total ...				11,551	.....	12,048	

The age constitution of the Blackpool population, with the rates per 1,000, and the corresponding rates for England and Wales were :—

AGES.	BLACKPOOL : Actual Figures.		Rate per 1,000.			
			Blackpool.		England and Wales.	
	Males	Females	Males	Females	Males	Females
All ages	25,425	32,946	436	564	484	516
Under 5 years ...	2,303	2,293	39·45	39·28	53·68	53·19
5 and under 10 ...	2,483	2,473	42·54	42·37	51·21	51·28
10 „ 15 ...	2,378	2,632	40·74	45·09	48·45	48·58
15 „ 20 ..	1,989	2,561	34·08	43·87	45·98	46·62
20 „ 25 ..	1,849	2,885	31·67	49·42	41·66	46·38
25 „ 30 ...	1,964	2,881	33·65	49·36	40·36	45·00
30 „ 35 ..	2,074	2,959	35·53	50·69	38·14	41·62
35 „ 40 ...	2,170	2,775	37·18	47·54	34·97	37·48
40 „ 45 ...	1,926	2,428	33·00	41·60	29·88	32·09
45 „ 50 ...	1,627	2,271	27·87	38·91	25·68	27·71
50 „ 55 ...	1,428	1,909	24·46	32·70	21·30	23·13
55 „ 60 ...	1,125	1,608	19·27	27·55	16·86	18·59
60 „ 65 ...	809	1,227	13·86	21·02	13·23	15·05
65 „ 70 ...	656	962	11·24	16·48	10·14	12·22
70 „ 75 ...	411	645	7·04	11·05	6·57	8·78
75 „ 80 ...	155	269	2·66	4·61	3·53	5·06
80 „ 85 ...	53	123	0·91	2·11	1·56	2·43
85 „ 90 ...	20	33	0·43	0·77	0·63	1·14
90 „ 95 ...	5	11				
95 „ 100 ...	—	1				
100 and over ...	—	—				

From the above table it will be seen that in Blackpool, as in England and Wales generally, females are in the majority, though the preponderance in Blackpool is distinctly greater. It is only in the age groups "under 5 years" and "5 and under 10 years" that the males exceed the females. In all the other age groups the contrary prevails, the preponderance increasing until the age group 20-25 is reached, when the females exceed the males by over 18 per 1,000 persons, then gradually subsiding but retaining an actual majority.

In the case of England and Wales the males exceed the females only in the age group "under 5 years," while the preponderance of females is the greatest in the same age group as Blackpool, viz., 20-25 years.

It will be noted that there were no persons over the age of 100 recorded at the Census in Blackpool.

With regard to the conditions as to marriage the following information appears in the Census returns. Proportions of 1,000 persons aged 20 years and upwards :—

	MALES.			FEMALES.		
	Single.	Married.	Widowed.	Single.	Married.	Widowed,
Blackpool	262	681	57	352	511	137
England and Wales.....	307	633	60	302	579	119

This table is of exceptional interest, and the conditions revealed account to a great extent, if not entirely, for the relatively poor position which Blackpool occupies as

regards the birth rate. The figures are not altogether suitable for a basis of investigation into the birth rate, for they refer to all women over the age of 20 years, and not only up to the child bearing age—say 45 years. It will be seen that the numbers of single and widowed women are proportionately greater in Blackpool than in the country generally, while the proportion of married women is smaller. If, therefore, we exclude cases of illegitimate children and children born of mothers under 20 years of age (which do not seriously affect our statistics) we find that the smaller proportion of potential mothers of legitimate children must inevitably be reflected in a lower birth rate, without indicating any loss of fertility in the community generally. If the birth rate was computed upon the number of potential mothers of legitimate children, instead of upon the community generally irrespective of age or sex, our position would not compare unfavourably with that of other towns where similar industries are carried out.

The relative positions of males and females as regards marriage is striking. Not only are a greater proportion of males married than of females in Blackpool itself, but the proportion is considerably greater than in the country generally, and the proportion of single men and widowers is smaller. If the married state has any influence upon health or longevity, the statistics if divided up for males and females should be of a more satisfactory nature in the former.

I have compared the proportion of married females in Blackpool with all the other County Boroughs in England

and Wales, and in only eight instances is the proportion smaller. These are :—

Exeter.....	509	Bournemouth.....	394
Southport	423	Brighton.....	491
Oxford	473	Eastbourne	419
Bath	413	Hastings.....	421

It is notable that with the exception of Exeter and Oxford, these are all health or pleasure resorts.

I have for the sake of comparison picked out six of the towns where the proportion of married women to the female population generally is highest. They are :—

Leeds	704	St. Helens	667
Coventry.....	666	Devonport	666
West Bromwich..	651	West Ham.....	656

With regard to certain infirmities, the Census revealed the following in Blackpool :—

	Males.		Females.		Total.
Totally blind	22	....	11	....	33
Totally deaf	9	....	14	....	23
Deaf and Dumb.....	6	....	7	....	13
Imbeciles	3	....	3	....	6
Feeble minded	13	....	14	....	27

With regard to tenements and number of rooms per tenement, the information supplied by the Census is as follows :—

Number of families living in tenements of 1 room each					113	
”	”	”	”	2	”	225
”	”	”	”	3	”	896
”	”	”	”	4	”	1,903
”	”	”	”	5	”	3,200
”	”	”	”	6	”	2,026
”	”	”	”	7	”	1,247
”	”	”	”	8	”	831
”	”	”	”	9	”	541
”	”	”	”	10 upwards		1,973

With regard to the occupants of single rooms, the 113 families comprise 250 persons. In 33 cases there was only 1 person per room, in 45 cases 2 persons, and in 22 cases 3 persons. The unsatisfactory information is given that in two instances families of six each occupied single rooms, and in each of these cases there was a child under the age of five years.

The distribution of the population in the various sized tenements was as follows :—

Size of Tenement.				Proportion of population.	
1 room	....	....	....	5 per 1,000	
2	”	....	....	11	”
3	”	....	....	69	”
4	”	....	....	137	”
5	”	....	....	243	”
6	”	....	....	161	”
7	”	....	....	99	”
8	”	....	....	64	”
9	”	....	....	46	”
10 and over	....	....	....	165	”

The instances in which the proportion per 1,000 of the population living in tenements of 10 rooms or over exceeded the Blackpool proportion were as follows :—

Chelsea	....	....	....	....	174
Hammersmith	....	....	....	....	329
Islington	....	....	....	....	259
Paddington	....	....	....	....	170
St. Marylebone	....	....	....	....	173
Westminster	....	....	....	....	206
Cardiganshire (Urban districts)....				....	190
Radnorshire	„	„	....	....	251

The proportion per 1,000 tenements, of tenements of various sizes was as follows :—

1 room	....	....	9	6 rooms	....	....	156
2 „	....	....	17	7 „	....	....	96
3 „	....	....	69	8 „	....	....	64
4 „	....	....	147	9 „	....	....	42
5 „	....	....	248	10 or more	...	....	152

With regard to the classification of buildings the following information was supplied by the Census :—

1. Buildings used as dwellings :—

	Number inhabited.		Separate Occupiers.		Popula- tion.		Unin- habited.		Being built.
<i>a.</i> Ordinary dwelling-houses...	12,247	...	12,566	...	52,996	...	686	...	184
<i>b.</i> Shops.....	753	...	761	...	3,352	...	49	...	7
<i>c.</i> Hotels, Inns, &c.....	92	...	93	...	1,078	...	—	..	—
<i>d.</i> Offices, warehouses, &c. ...	18	...	18	...	61	...	4	...	—
<i>e.</i> Institutions	15	...	15	...	718	...	—	...	—
<i>f.</i> Others	24	...	28	...	118	...	1	...	1
<i>g.</i> Tents, vans, &c.....	—	...	11	...	48	...	—	...	—

2. Buildings not used as dwellings :—

<i>a.</i>	Places of worship	...	...	...	...	...	45
<i>b.</i>	Government and Municipal buildings	...	...	...	...	...	9
<i>c.</i>	Shops	...	...	...	...	...	1,157
<i>d.</i>	Offices...	...	...	...	...	...	87
<i>e.</i>	Warehouses, &c.	...	...	...	...	...	184
<i>f.</i>	Theatres, &c.	...	...	...	...	...	8

With regard to occupations and industries, I append a few of those in which the numbers are high :—

Occupation.	Males.	Females.
National government	179	37
Clerical	66	5
Legal	121	2
Medical	54	2
Teaching	97	258
Art, music, drama	698	170
Domestic indoor service	83	2,697
Other domestic service	216	513
Commercial occupations	1,463	123
Conveyance on railways	463	5
„ „ roads	1,662	9
Farmers and farm workers	200	22
Gardeners	170	9
House building	2,500	3
Other buildings	148	—
Printing, &c.	344	124
Tailors	182	67
Boot, &c., makers	191	7
Hairdressers	162	11
Dressmakers	5	548
Milliners	2	208
Preparation of and dealers in food	1,706	724
General labourers	965	—

Births —During the year 1,043 births were registered, including 19 in the Kirkham Workhouse. These, divided

into males and females for the four quarters of the year, were as follows :—

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total.
Males ...	131	133	122	125	511
Females	120	135	133	144	532
Total ...	251	268	255	269	1,043

The birth-rate for the year on the gross population was 16·25 per 1,000. This is only 42 per cent. of the birth-rate for 1878, and the table on page 32, and the chart facing page 32, will reveal vividly the steady and almost continuous decline which is taking place in the rate.

This rate compares with the other divisions of the country as follows :—

England and Wales.....	23·9 per 1,000
96 Great towns.....	25·1 „
145 Smaller towns	23·9 „
Rural England and Wales	22·2 „
Blackpool	16·25 „

In comparison with other portions of the country, the birth-rate in Blackpool has always been low. This is due entirely to the lower proportion in the population of married women of child-bearing age.

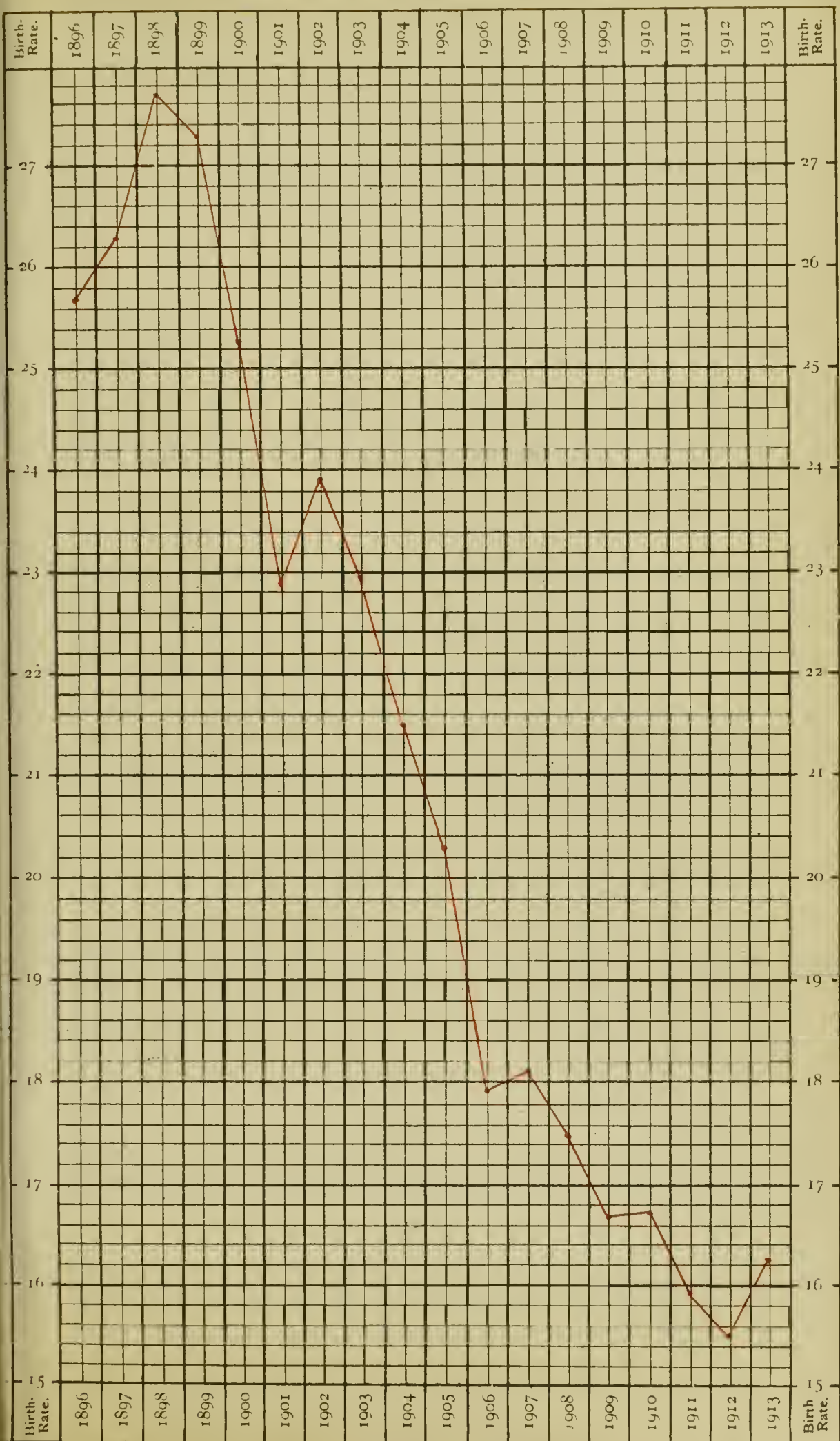
The earliest recorded birth-rate which I have of Blackpool is for the year 1878, when, with a population of 13,000, there was a rate of 38·8 per 1,000. I have prepared a table

based on the same lines as a table in the Annual Report of the Registrar-General for the year 1907. The rate for 1878 is taken as a standard and is called 100, and the subsequent years are given as percentages compared with this year, 1878 :—

Period.	Birth rate Blackpool.	Birth rate Blackpool compared with rate for 1878 taken as 100	Birth rate England and Wales.	Birth rate England and Wales, compared with rate for 1878, taken as 100
1878	38.8	100	35.6	100
1879	36.6	94.3	34.7	97.5
1880	34.0	87.6	34.2	96.1
1881	30.6	78.9	33.9	95.2
1882	30.0	77.3	33.8	94.9
1883	30.0	77.3	33.5	94.1
1884	29.8	76.8	33.6	94.3
1885	27.4	70.6	32.9	92.4
1886	25.9	66.8	32.8	92.1
1887	25.3	65.2	31.9	89.6
1888	24.5	63.1	31.2	87.6
1889	26.5	68.3	31.1	87.4
1890	23.7	61.1	30.2	84.8
1891	22.3	57.5	31.4	88.2
1892	24.0	61.9	30.4	85.4
1893	22.4	57.7	30.7	86.2
1894	23.9	61.6	29.6	83.1
1895	26.7	68.8	30.3	85.1
1896	25.7	66.2	29.6	83.1
1897	26.25	67.7	29.6	83.1
1898	27.74	71.5	29.3	82.3
1899	27.34	70.5	29.1	81.7
1900	25.27	65.1	28.7	80.6
1901	22.90	59.0	28.5	80.1
1902	23.96	61.8	28.5	80.1
1903	22.97	59.2	28.4	79.8
1904	21.53	55.5	27.9	78.4
1905	20.30	52.3	27.2	76.4
1906	17.91	46.2	27.1	76.1
1907	18.09	46.6	26.3	73.9
1908	17.54	45.2	26.2	73.6
1909	16.70	43.0	25.6	71.9
1910	16.74	43.1	24.8	69.7
1911	15.97	41.2	24.4	68.5
1912	15.50	39.9	23.8	66.9
1913	16.25	41.9	23.9	67.1

Illegitimate Birth Rate.—There were 84 illegitimate children born during the year, including 18 at

BIRTH-RATES FOR THE YEARS 1896—1913.





Kirkham Workhouse. This figure gives the following rates :—

- (1) 1.31 per 1,000 of the inhabitants.
- (2) 5.48 per 1,000 females of conceptive age.*
- (3) 8.05 per cent. of the total births.

These figures for the past few years have been as follows :—

	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904
(1)	1.31	1.45	1.29	1.13	1.35	1.14	1.08	1.14	1.24	1.34
(2)	5.48	6.07	5.27	4.61	5.50	4.64	4.39	4.64	5.05	5.47
(3)	8.05	9.35	8.10	6.76	8.09	6.49	5.96	6.35	6.10	6.24

The second figure, *i.e.*, the proportion of illegitimate births to women at conceptive ages, is the one which represents best the progress of illegitimacy in the borough.

** Calculated on there being 15,316 females at child-bearing age—20 to 45.*

Deaths.—Based on a population of 64,186, the death-rate for the year was 14.27 per 1,000. The comparison of Blackpool with other portions of the country is as follows :—

England and Wales.....	13.4
96 Great Towns	14.7
145 Smaller Towns	13.0
Rural England and Wales	12.1
Blackpool	14.3

It will be noted that the death rate for Blackpool was in excess of that for the country generally, but below the average of the 96 great towns amongst which it is classed.

The rate is somewhat higher than in the past few years, but this is entirely due to the high infantile mortality to which further reference is made.

There were deaths of 47 residents in Kirkham Workhouse, and of 38 residents who died away from Blackpool, whose deaths were notified to me by the Registrar General.

The deaths divided into males and females for the four quarters of the year are as follows :—

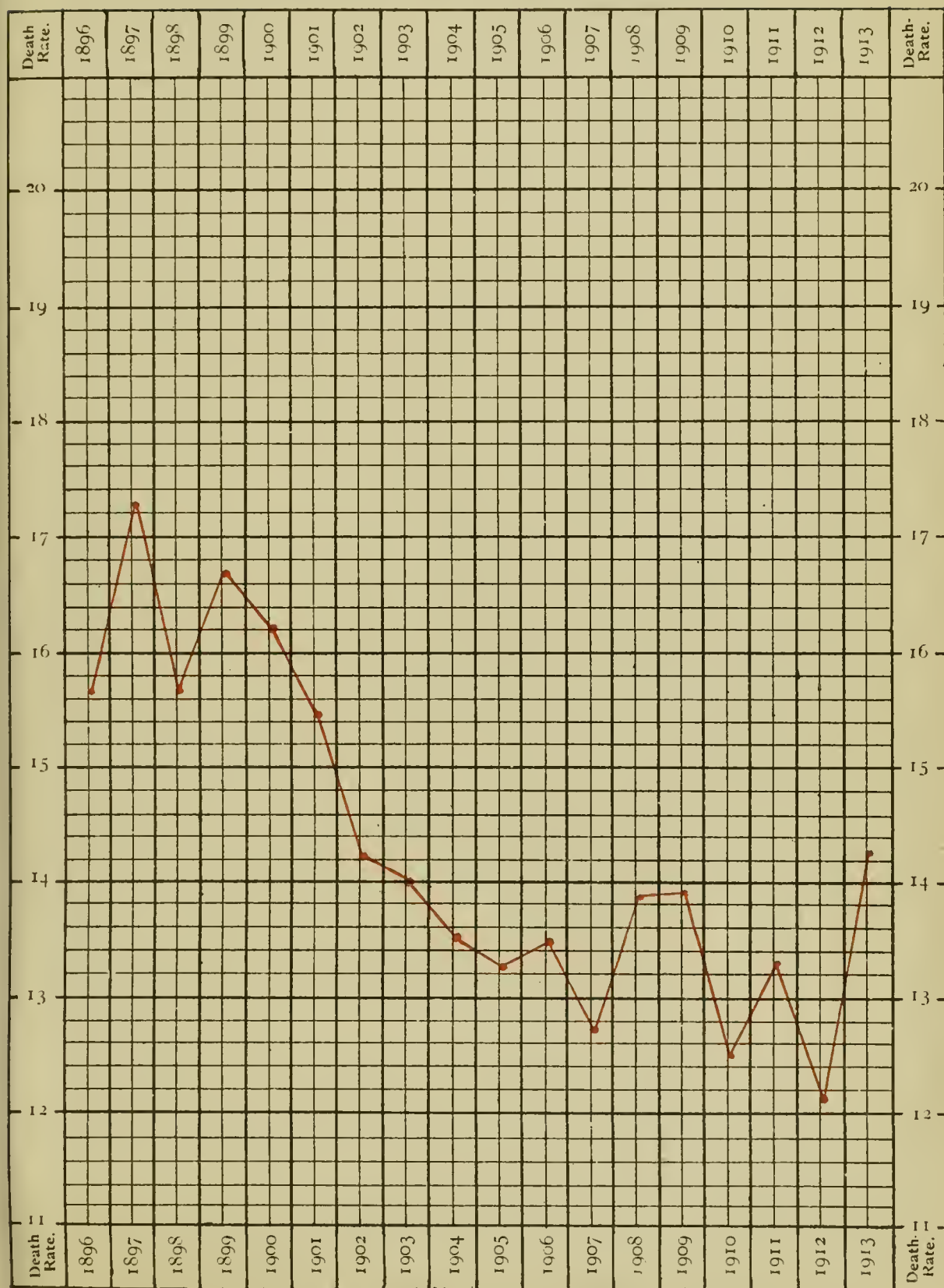
	1st Quarter	2nd Quarter.	3rd Quarter.	4th Quarter	Total.
Males ...	124	106	101	124	455
Females	120	108	115	116	459
Totals ...	244	214	216	240	914

The Ward statistics with regard to deaths and death-rates were as follows :—(the rates for the previous year being included for the sake of comparison).

WARDS.	Estimated Population.	Number of Deaths (Residents)	Death Rate 1913	Death Rate 1912
Claremont	11,688	152	13.00	10.98
Talbot.....	13,314	207	15.55	12.51
Bank Hey	1,852	19	10.26	12.87
Brunswick.....	9,376	132	14.08	12.73
Foxhall	19,334	281	14.53	12.78
Waterloo	8,622	123	14.26	10.73

DEATH-RATES, 1896—1913.

CORRECTED FOR AGE AND SEX DISTRIBUTION.





The number of deaths at various ages and the percentage of the total deaths are as follows :—

Age period.	Number of deaths.	Percentage of total deaths.
Under 12 months.....	131	14·3
1 and under 5 years...	60	6·6
5 and under 65 years	438	47·9
65 years and over	285	31·2

Of the 914 resident deaths in 1913 the causes of 861, or 94·2 per cent. were certified by medical practitioners. Inquests were held respecting 29, or 3·2 per cent., whilst the remaining 24 or 2·6 per cent. were uncertified.

The following table, shows the percentage of deaths certified by medical practitioners, inquest cases, and uncertified cases :

	Certified by Medical Practitioners		Inquest Cases.		Uncertified Cases.	
	Total.	Per cent. of total.	Total.	Per cent. of total.	Total.	Per cent. of total
1911	745	91·9	35	4·3	31	3·8
1912	686	91·1	40	5·3	27	3·6
1913	861	94·2	29	3·2	24	2·6

Causes of Death.—According to the groups of diseases the following deaths occurred :—

		No. of Deaths.	Percentage of Total Deaths.
I. ...	General Diseases	241	26·4
II. ...	Diseases of the Nervous System and of the Organs of Special Sense	100	10·9
III. ...	Diseases of the Circulatory System	113	12·3
IV. ...	Diseases of the Respiratory System	129	14·1
V. ...	Diseases of the Digestive System	110	12·0
VI. ...	Non-Venereal Diseases of the Genito-Urinary System and Annexa	48	5·6
VII....	The Puerperal State	5	0·5
VIII...	Diseases of the Skin and of the Cellular Tissue	4	0·4
IX. ...	Diseases of the Bones and of the Organs of Locomotion	2	0·2
X. ...	Malformations	7	0·7
XI. ...	Diseases of early Infancy ...	46	5·0
XII....	Old Age	61	6·7
XIII...	Affections produced by external causes	21	2·3
XIV....	Ill-defined causes.....	27	2·9

DIABETES caused 15 deaths of persons at the following ages :—

35 to 45 years.....	1 male.
55 to 65 years.....	1 male and 2 females.
65 to 75 years.....	2 males and 5 females.
75 years and over.	1 male and 3 females.

The following are the particulars obtained as to the duration of the disease :—

Under 1 year	3 cases.
1 to 2 years.....	3 cases.
2 to 3 years.....	4 cases.
4 to 5 years.....	2 cases.
7 to 8 years.....	1 case.
10 years or over.....	2 cases.

SYPHILIS was the direct cause of death of 5 infants under 12 months of age. In previous reports I have made reference to this subject and have called attention to the large number of infants whose lives are sacrificed each year owing to the parents suffering from uncured syphilis. The number of deaths reveals only a small amount of the damage done by the ravages of this disease, as it does not indicate the amount of protean illness which is not fatal, but which is directly caused by infection by the specific organisms which are now demonstrated as the cause of syphilis.

This disease is rapidly being brought into the scope of diseases over which Public Health Authorities are assuming direct control. Great advances have been made within the past few years in the diagnosis of syphilis by the "Wasserman" reaction, and in its treatment by a drug called "606." I have had in my mind some form of notification of the disease, with restrictions upon the marriage of persons with uncured syphilis. The general opinion amongst sanitarians appears to be, however, in the direction of increasing the facilities for

diagnosis and treatment, and already some sanitary authorities have undertaken the free examination of blood for the "Wasserman" reaction in the same way as we now examine it without charge for the "Widal" reaction for Enteric Fever.

It is not an easy matter to discuss this subject in a report of this nature, but a Commission is now sitting and making investigations, and we must look forward with interest to the Report which will be issued as an aid to us in formulating our scheme for dealing with syphilis.

CANCER was the cause of 92 deaths, 36 of which were males, and 56 females. I here reproduce a Table which appeared on page 52 of the 1907 Health Report, and with the figures for the subsequent years added :—

YEAR.	Number of Deaths.	Death Rate.	England and Wales.
1895	16	0.486	0.753
1896	17	0.464	0.762
1897	30	0.746	0.785
1898	22	0.484	0.799
1899	34	0.705	0.826
1900	47	0.937	0.820
1901	54	1.064	0.842
1902	47	0.901	0.844
1903	52	0.981	0.872
1904	41	0.755	0.877
1905	54	0.969	0.885
1906	54	0.946	0.917
1907	52	0.890	0.909
1908	51	0.854	0.923
1909	59	0.960	0.952
1910	46	0.765	0.967
1911	72	1.179	0.993
1912	69	1.111	—
1913	92	1.433	—

The parts of the body affected with the disease were as follows :—

	Males.	Females.	Total.
Buccal Cavity	8	1	9
Stomach, Liver, etc.	11	24	35
Peritoneum, Intestines, and Rectum	8	6	14
Female Genital Organs	—	13	13
Breast	—	8	8
Skin	1	1	2
Unspecified	8	3	11
Total ...	36	56	92

and the deaths occurred in the following age groups :

25 to 35 years	3 cases.
35 to 45 „	4 cases.
45 to 55 „	17 cases.
55 to 65 „	29 cases.
65 to 75 „	32 cases.
75 years and over	7 cases.

Enquiries have been made into the family history of the cases, and the following information was obtained :—

Father died of Cancer	4 cases.
Mother died of Cancer....	2 cases.
Husband died of Cancer	1 case.
Wife died of Cancer	1 case.
Brother died of Cancer	1 case.
Sister died of Cancer	4 cases.
No information	24 cases.
No family history of Cancer	55 cases.

Offers of disinfection have been made in all cases, but in 15 only was disinfection by the Health Authority accepted. In the other cases it was done by the occupiers.

APOPLEXY and its allied conditions were the causes of 52 deaths. The record for the past thirteen years has been as follows :—

Year.				Residents.		Total.
				Males.	Females.	
1901	...	...	...	17	17	34
1902	...	...	...	18	17	35
1903	...	...	...	25	10	35
1904	...	...	...	17	18	35
1905	...	...	...	10	32	42
1906	...	...	...	20	26	46
1907	...	...	...	27	24	51
1908	...	...	...	28	42	70
1909	...	...	...	26	16	42
1910	...	...	...	26	37	63
1911	...	...	...	33	36	69
1912	...	...	...	23	15	38
1913	...	...	...	23	29	52

The age groups of the 1913 cases were as follows :—

45 to 55 years	....	....	....	....	8 cases
55 to 65 „	....	....	....	....	14 cases
65 to 75 „	....	....	....	....	19 cases
75 years and over	....	....	....	....	11 cases

It will be observed that the usual age incidence of apoplexy is borne out by the 1913 results, viz., its more frequent occurrence between the ages of 55 and 75. Deaths from apoplexy under one year, as occurred in 1911 and 1912, are very exceptional.

CONVULSIONS was vaguely attributed as the cause of 9 deaths, 5 of which were males and 4 females. With the exception of two, all the deaths were under the age of one year. It would be more satisfactory if this term were only applied when it is not possible to indicate the cause of the convulsions, as they are only symptoms, not a disease in themselves.

DISEASES OF THE HEART claimed a large number of victims, 86 deaths being attributed to them. Of these 86, 68 were valvular diseases, 6 were fatty degeneration, while the remaining 12 were classed under the general designation of "other diseases."

DISEASES OF THE RESPIRATORY SYSTEM apart from Phthisis accounted for 129 deaths.

The months in which these deaths occurred were as follows :—

January.....	8	July	7
February	29	August.....	7
March.....	5	September	9
April	17	October.....	8
May.....	16	November.....	2
June	7	December.....	14

The record of these diseases for the past few years has been as follows :—

Year	Cases	Year	Cases.
1901... ..	115	1908... ..	106
1902... ..	112	1909... ..	140
1903... ..	96	1910... ..	108
1904... ..	99	1911... ..	91
1905... ..	90	1912... ..	108
1906... ..	93	1913... ..	129
1907... ..	117		

WHOOPING COUGH caused 5 deaths, 4 being under the age of two years. One death occurred in each of the following months, viz.: April, May, October, November, and December :—

The number of deaths in previous years has been as follows :—

1912	1911	1910	1909	1908	1907	1906	1905	1904	1903
3	7	10	6	10	5	6	3	2	19

INFLUENZA caused 13 deaths, as compared with 7, 2, 4, 19, and 12 in the five years immediately preceding. The age incidence, and the months in which the fatal cases occurred, were as follows :—

0	to	1—2	....	....	....	February	....	3
25	to	35—2	....	....	....	March	....	3
35	to	45—1	....	....	....	April	....	1
45	to	55—3	....	....	....	July	....	1
55	to	65—2	....	....	....	August	....	1
65	to	75—2	....	....	....	September	....	2
75	and over	1	....	....	....	December	....	2

The circular of the Local Government Board relating to Annual Health Reports expresses a request that reference will be made to the amount of poor law relief, and the extent to which hospital and other forms of gratuitous medical relief are utilised.

I am obliged to Mr. Dixon, the relieving officer, for the following information :—

A SUMMARY OF PERSONS WHO HAVE RECEIVED OUT-RELIEF
IN BLACKPOOL DURING THE YEAR 1913.

Males : 118 temporarily disabled and 105 not able-bodied	....	....	....	....	....	223
Females : 207 in health (widows, &c.) with children, and 116 not able-bodied....	....	....	....	....	....	323
Children under 16 years of age	....	....	....	....	....	429
Total						975

Included in the above number, 302 were sent to the Kirkham Union, viz. :—

77 under 30 years of age.
135 over 30 and under 60.
90 over 60.

In addition to the above, 737 were sent to the casual ward at the Kirkham Union from Blackpool.

I am obliged to Dr. Richardson, for obtaining the following information for me.

VICTORIA HOSPITAL, 1913.					
	Medical.		Surgical.		Total.
	Males.	Females	Males.	Females	
In-Patients ...	56	62	316	242	676
Out-Patients ...	238	284	499	342	1363
Total ...	294	346	815	584	2039

I am obliged to Dr. Butcher for the following information—

FOXTON DISPENSARY, 1913.					
	Medical.		Surgical.		Total
	Males	Females	Males	Females	
Out Patients...	207	282	106	126	721

Infantile Mortality—One hundred and thirty one children died under the age of twelve months during 1913. The Infantile Mortality rate was 125.6 per 1,000 births, which compares very unfavourably with the figure for the

previous year, viz 88. There is no doubt that the prolonged period of dry weather was accountable for this rate, though it is difficult to explain why the rate was not affected in other parts of the country to the same degree. The comparison with other portions of the country is as follows :—

			1912			1913
England and Wales	....	....	95	....	....	109
96 Great Towns	....	....	101	....	....	116
145 Smaller Towns	....	....	98	....	....	112
Rural England and Wales....			86	....	....	96
Blackpool	....	....	88	....	....	126

The rates for the four quarters of the year with the rainfall in each quarter were as follows :—

						Rainfall in inches
1st quarter	....	....	....	....	112	9.08
2nd	,,	....	....	....	49	8.05
3rd	,,	....	....	....	153	6.37
4th	,,	....	....	....	190	9.19

The comparison with previous years is seen on the table on page 46 and the chart facing page 46. It will be observed that up to about 1900, the rate of 126 would not have been considered out of place, in fact during the early portion of that decennium, it would have been hailed with great satisfaction as abnormally low. Since 1900 however the lowering of the rate has been so marked that we now consider a rate of 126 as a cause for special investigation.

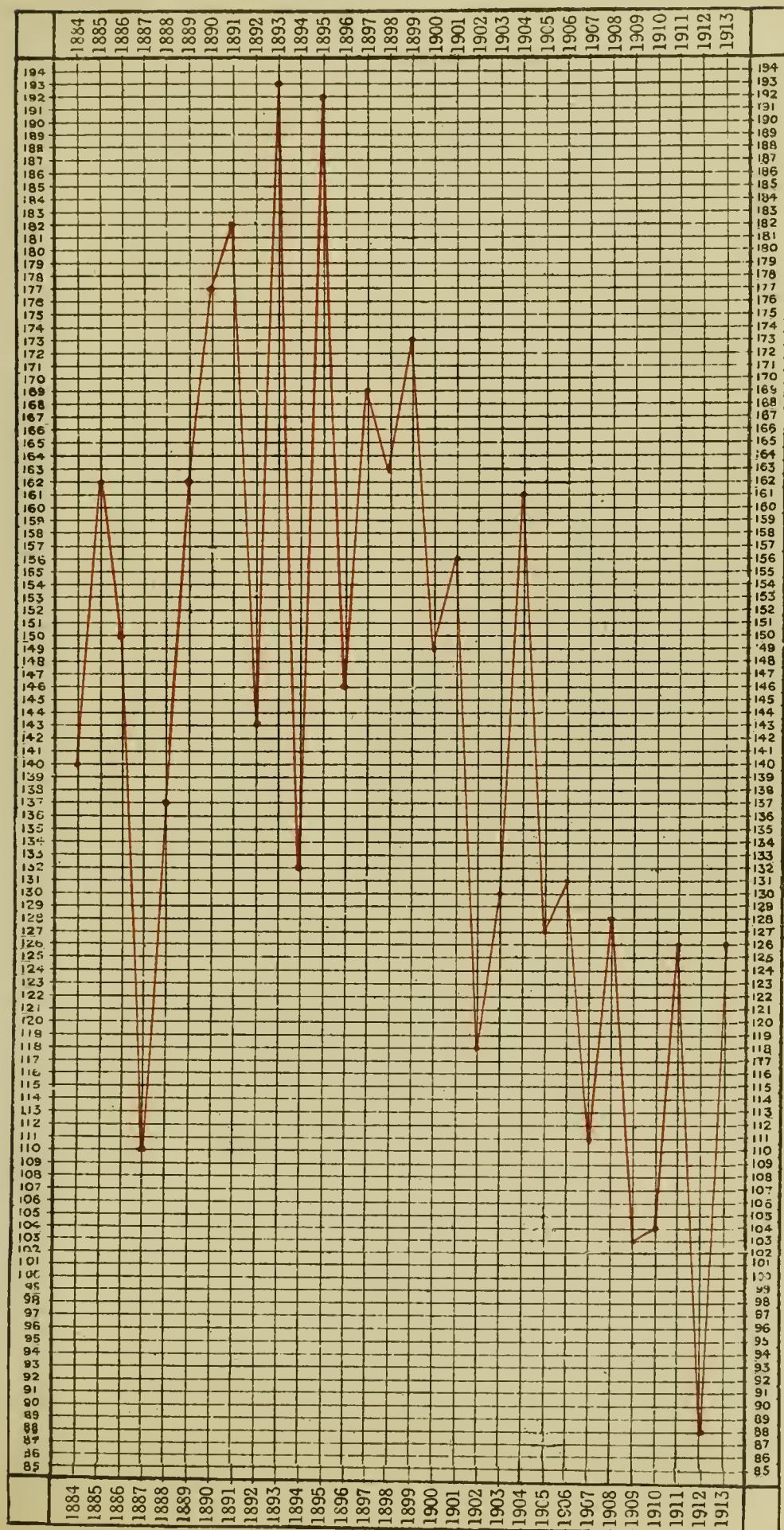
INFANT MORTALITY, 1879—1913

Rate per 1,000 Births

Year	Blackpool	England and Wales
	Residents only	
1879	122	135
1880	206	153
1881	126	130
1882	221	141
1883	123	137
1884	140	147
1885	162	138
1886	150	149
1887	110	145
1888	137	136
1889	162	144
1890	177	151
1891	182	149
1892	143	148
1893	193	159
1894	132	137
1895	192	161
1896	146	148
1897	169	156
1898	163	160
1899	173	163
1900	149	154
1901	156	151
1902	118	133
1903	130	132
1904	161	145
1905	127	128
1906	131	133
1907	111	118
1908	128	121
1909	103	109
1910	104	106
1911	126	130
1912	88	95
Mean of 34 years	146	139
1913	126	109

INFANT INSURANCE.—Enquiries revealed the following information :—

CHART SHOWING INFANTILE MORTALITY from 1884 to 1913.



Insured between	£4 and £4 10s.	1 case.
„	£3 10s. and £4	1 case.
„	£3 and £3 10s.	1 case.
„	£2 10s. and £3	4 cases.
„	£2 and £2 10s.	2 cases.
„	£1 10s. and £2	14 cases.
„	£1 and £1 10s.	3 cases.
Insured under £1	.... ....	16 cases.
Insured but not in benefit	.... ....	9 cases.
Insured, amount not stated	.... ....	1 case.
Not Insured	.... ....	60 cases.
No information	.... ....	19 cases.

I do not think this question has any material bearing upon the incidence of Infantile Mortality. Although the information obtained is of interest, I am inclined to the opinion that the Insurance is an indication of thrift, and of anxiety, that, should the stress of life prove too much for the newly born child, it shall receive a decent burial. It will be noted that the cases of high insurance are small, the majority of them being of the moderate amount of £2 or less.

AGE AT DEATH.—81 cases or nearly 62 per cent of the total died before reaching the age of three months, and the experience of past years has been borne out, viz. that the younger the infant the poorer are the chances of viability.

MODE OF FEEDING.—Eleven of the cases died unfed, *i.e.* before any mode of feeding could possibly have had any influence upon viability. These are mostly cases of premature birth in which death occurred within a few

hours after birth. Of the remainder 24 were breast fed, while 88 were hand fed either partly or entirely. I think that in each report which I have submitted to you I have drawn your attention to similar figures. Were it not that it had such a very direct influence upon the direction in which we should concentrate our work, I should pass over this matter with few words. It cannot be too forcibly brought forward to expectant mothers that the best prospects of rearing their children is by persisting in natural feeding. Breast milk is uncontaminated by any form of extraneous matter, is of the right strength and warmth for the child and any substitute is poor. The readiness with which mothers abandon it is remarkable. The reasons given vary, but mainly fall into two groups, (1) fear or imagination that the supply of breast milk is ceasing and (2) advice given by ignorant neighbours. The supply of breast milk varies with the condition of health of the mother and a diminution in the secretion is probably only temporary. The best food for the feeding mother is cows milk, and stout or other alcoholic drinks have no beneficial effect either in quality or quantity upon the breast milk. I have given special instructions to the Health Visitor that in all cases where natural feeding is recommended by a registered midwife close investigation into all the circumstances of the cases must be made to see that such advice is justified.

The relative numbers of deaths of breast fed and other children is very remarkable when we consider the group of deaths attributable to Diarrhoeal diseases. In this group only two breast fed children died, while 31 died who were hand fed either partially or entirely.

EMPLOYMENT OF MOTHERS.—In 25 cases only were the mothers employed away from home, so that it must be evident that this has not any material bearing upon the incidence of infantile mortality.

The months in which the infantile deaths occurred were :—

January....10	April ....3	July.....4	October.... 18
February.11	May.....6	August 11	November 16
March.....8	June.....3	Sep.. ....30	December 11

Having regard therefore to all the circumstances associated with the infantile mortality in Blackpool in 1913, as revealed by investigation of the Health Visitor, I have come to the conclusion that in the main, the high rate is attributable to the infection and contamination of the food substituted for breast milk. This contamination is due to the prolonged drought through which we passed in the summer, bringing with it amongst other things an increased number of house flies. The lessons which we must learn or re-learn are as follows : —

(a) The importance of persevering with breast Milk.

(b) The importance of domestic cleanliness in order to reduce the facilities for breeding of the house fly. In this regard the work done in my department in the inspection of ash receptacles is important, and I trust the Health Committee will not in any way relax its efforts in enforcing galvanised iron ashbins with tight fitting covers.

(c) I think the Corporation should take into consideration a still further extension of the salt water mains, with facilities, financial and otherwise, for installation of the service especially

in the more thickly populated portion of the town. It is of great importance that we should place ourselves in such a position that we are independent of any restrictions which it may be necessary to impose upon the use of fresh water.

I cannot leave the subject of infantile mortality without calling your special attention to the very valuable work done by the Health Visitor Miss WARING. During the summer the work is very arduous, and without in any way appearing to reflect upon the value of her work, I think it would be productive of good results if the Health Committee empowered me at the commencement of each summer to employ temporarily a second trained Health Visitor in order to cope with the work and bring to the notice of expectant mothers the remarks I have made under (a).

The information obtained by Miss Waring is classified as follows :—

DEATHS UNDER ONE.—TOTAL.
(Calendar Quarters.)

CAUSES.	YEAR		QUARTERS.								FEEDING			No Information	Mother employed away from home	Illegitimate
	Under 3 months	Total	First		Second		Third		Fourth		Not Fed	Breast Fed	Hand Fed partly or entirely			
			Under 3 m'nths	Total	Under 3 months	Total	Under 3 months	Total	Under 3 months	Total						
1—Common Infectious Diseases (Measles, Diphtheria, and Whooping Cough)	1	6	1	1	—	1	—	—	1	—	3	—	1	5	—	—
2—Diarrhoeal Diseases :— Diarrhoea, Enteritis, and Gastritis... ..	10	33	—	1	—	—	—	6	20	4	12	—	2	31	—	8
3—Congenital Malformations	6	6	3	3	—	—	—	1	1	2	2	1	2	2	1	1
4—Premature Birth, Debility, Icterus, etc.	38	41	9	11	6	6	10	10	10	13	14	7	5	25	4	7
5—Tubercular Diseases	—	1	—	—	—	1	—	—	—	—	—	—	—	—	1	1
6—Other Causes { Convulsions... .. Bronchitis Pneumonia Other causes	5 4 3 14	8 6 10 20	3 1 1 5	3 2 1 7	— — 1 1	1 — 2 1	— 1 — 4	— 1 — 4	— 1 4 8	2 2 1 4	4 3 3 4	— — — 3	4 3 3 4	4 3 7 11	— — — 2	3 — 1 5
Totals	81	131	23	29	8	12	22	45	28	45	45	11	24	88	8	25

Deaths from Violence.—The number of deaths classified under this heading was 21 for the year 1913, as compared with 25 in 1912, 17 in 1911, 16 in 1910 and 25 in 1909. They are classified thus:—

	Suicide.	Accidents or affections produced by external causes.	Total.
Burns	—	1	1
Cutting or Piercing Instrument	2	—	2
Drowning	3	2	5
Homicide	—	—	—
Injury by vehicles, etc. ...	—	7	7
Injury by fall	—	2	2
Absorption of deleterious gases ...	1	2	3
Poison	1	—	1
	7	14	21

Inquests.—The number of inquests held during the year was 29. The rate of inquest deaths was 32 per 1,000 deaths, as compared with 72 per 1,000 deaths in England and Wales. The following is an analysis of the verdicts:—

SUICIDE.

NATURAL AND OTHER CAUSES.

Bright's Disease	...	...	...	...	...	...	1
Broncho Pneumonia	...	...	...	...	...	...	1
Convulsions	...	...	...	...	...	...	2
Found Dead...	...	...	...	...	...	...	1
Injury at Birth	...	...	...	...	...	...	1
Septicæmia	...	...	...	...	...	...	1
Syncope	...	...	...	...	...	...	1
Tuberculosis...	...	...	...	...	...	...	1

PART II. INFECTIOUS DISEASES.

Cases of Infectious Diseases notified during the years 1895-1913 (inclusive).

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Smallpox	8	—	—	—	—	—	4	2	22	8	3	9	—	—	—	—	—	—	—
Diphtheria and Membranous Croup	17	6	7	10	13	24	134	75	40	46	49	54	84	61	96	41	40	55	41
Erysipelas	—	—	—	—	—	14	13	13	19	26	17	18	13	18	38	20	26	23	24
Scarlet Fever	154	208	177	77	141	187	271	197	257	179	200	183	177	238	348	181	84	83	102
Typhus Fever	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric Fever	79	66	50	67	59	68	58	70	42	28	51	39	41	65	48	12	39	17	13
Puerperal Fever	1	1	2	5	5	3	2	2	3	5	3	2	2	3	4	7	5	6	5
Measles	108	148	794	259	370	302	532	863	127	1386	871	389	309	1268	834	660	1181	720	1232
Rötheln	2	2	—	—	1	2	5	5	5	13	27	6	1	—	—	—	—	—	—
Tuberculosis:																			
(a) Pulmonary	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	44	133	131
(b) Non-pulmonary	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	46
Cerebro-Spinal Meningitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Poliomyelitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	—	—
Totals	369	431	1031	418	589	600	1019	1227	515	1691	1221	700	627	1653	1368	921	1419	1040	1594

Scarlet Fever.—One hundred and two notifications were received during the year and two deaths occurred. The incidence of notification was satisfactorily low, though slightly higher than in the years 1911 and 1912. The cases were distributed evenly throughout the year with a slight preponderance in September and October. There were eight weeks in which no notifications were received. No particular portion of the town was specially affected.

The ages and sexes of the notified cases were as follows :—

	Males.	Females	Total.
Under 5 years	11	12	23
5 to 10 years	27	19	46
10 to 14 years	10	12	22
14 to 20 years	3	1	4
20 to 25 years	1	3	4
25 to 30 years	1	1	2
30 years and over	—	1	1
Totals	53	49	102

Over half the cases were children of school age.

The 102 cases occurred in 94 houses. In 88 houses there was one case each, in 4 houses two cases each, and in 2 houses three cases.

Ninety-one of the cases, or 89 per cent. were removed to the Sanatorium.

The case mortality was 1·96 per cent., and the death-rate was 0·03 per 1,000 of the population.

The fatal cases were a female of 14 years and a male of 4 years.

Diphtheria.—Forty-one notifications were received during the year and six deaths occurred. The age groups and sexes of the notified cases were as follows :—

	Males.	Females.	Total.
Under 5 years	3	6	9
5 and under 10 years ...	17	11	28
10 and under 14 years ...	1	2	3
14 and under 20 years ...	—	—	—
20 and under 25 years ...	—	—	—
25 and under 30 years ...	—	1	1
30 years and over	—	—	—
Totals	21	20	41

It will be seen from the above table that 31 of the cases, or 76 per cent. were children of school age, though no special school was affected, nor was the disease limited to any part of the town.

Thirty-one of the cases, or 76 per cent. were removed to the Sanatorium.

The fatal cases were males of 3 and 11 years, and females of 3, $4\frac{1}{2}$, 5, and 6 years. Five of the deaths occurred in cases treated in the hospital, and one in cases treated at home. The case mortality was 14·6 per cent., and the death-rate was 0·9 per 1,000 of the population.

The administrative measures taken to deal with the disease have remained as in previous years, viz. (a) free distribution of anti-toxin to actual and suspected cases, (b) free bacteriological examination of patients and contacts, and (c) isolation of cases at the Sanatorium. In view of the fact that such a large percentage of the cases were between the ages of 5 and 14, all cases of sore throat in children attending school should be considered suspicious and should be excluded from school until the non-infectious nature has been determined.

Small Pox.—No cases of this disease have occurred in the town since 1906. Through the courtesy of Mr. Thomas Dixon, the Registrar of Births and Deaths, I am informed that the number of primary successful vaccinations during the year was 468. There were 339 conscientious objectors. In so far as universal infantile vaccination can be considered a prophylactic against the spread of small pox, these figures are unsatisfactory.

Measles.—This disease is compulsorily notifiable in the town. During 1913, 1,232 cases were notified, and 13 deaths occurred. The age and sex groups were as follows :—

	Males.	Females.	Total.
Under 5 years	290	283	573
5 to 14 years	330	288	618
14 to 20 years	6	15	21
20 years and over	8	12	20
Totals	634	598	1,232

It will be observed that nearly one half of the total cases were in children under school age, one half in children of school age, while the small remainder of 41 cases were above the age of 14 years. All the deaths were in children under the age of 5 years.

The 1,232 cases occurred in 814 houses. In 517 houses there was one case each ; in 206 houses two each ; in 68 houses three each ; in 16 houses four each ; in 7 houses five each.

The majority of the cases occurred during the months of August, September, October, November and December. 973, or 79 per cent. were notified during these months.

The death-rate was 0·20 per 1,000 of the population, while the case mortality was 1·06 per cent. Fifty-one cases were removed to the Sanatorium for isolation and treatment, and the infants' departments of three schools were temporarily closed.

It will be observed from the table on page 54 how heavy has been the incidence of measles during the past

few years, and this, in spite of the fact that it has been a notifiable disease with us for many years, that isolation is enforced either at home or in hospital, and that disinfection is carried out.

Compulsory notification has been adopted in many towns, but has been discontinued, as it has failed to reduce the incidence of the disease in these towns as it has failed in Blackpool.

I have given serious consideration to this matter, and have weighed carefully the arguments for and against compulsory notification, with a view of suggesting to the Health Committee that the time has now arrived for discontinuing the system here.

The chief, if not the only reason, for our inability to check the spread of the disease is the fact that for the first few days of an attack, there is nothing to differentiate it from an ordinary cold, and it is only when the rash appears on the fourth day that the exact nature of the illness is disclosed. The infectivity prior to the rash is, however, just as great as after the rash appears. If therefore the object of notification is merely to reduce the number of cases, I should not have much difficulty in forming the opinion that it is useless.

In spite of popular opinion to the contrary we must bear in mind that measles is a dangerous disease, especially by reason of the Bronchitis and Broncho Pneumonia which frequently arises as a complication. We must therefore consider the question "Has compulsory notification any effect in reducing the tendency to complications?" It is

because I answer this question in the affirmative in my own mind that I refrain in the meantime from suggesting discontinuance of notification. If we had some means of comparing the "case mortality," that is the ratio of actual cases to deaths in districts in which notification is and is not in force we should be in a much better position to judge of the value of the system. Such a comparison is, however, not possible, for the actual number of cases can only be known by compulsory notification.

Enteric Fever.—Thirteen notifications of this disease were received and one death occurred during the year. Having regard to the fact that the incidence of this disease is largely a reflection of the efficiency of our sanitary administration, the 1913 figure is very satisfactory. Its comparison with previous years is seen in the table on page 54. With the exception of the year 1910, when there were only 12 cases, the 1913 figure is the lowest yet recorded.

The months in which the cases occurred were as follows:—April 1, May 1, July 2, August 1, October 5, November 1, December 2.

The only history obtainable on enquiry into the cases was that in five of them shellfish had been eaten, and one case was imported from another district.

Eleven cases, or 85 per cent. were removed to the Sanatorium. In all instances where there are cases under observation or where the patient is treated at home, typhoid pails are sent, into which the excreta are placed.

These pails are changed daily and their contents burned at the Destructor.

Puerperal Fever.—Five notifications were received and one death occurred during the year.

The details of the five cases are as follows :—

Attended by medical practitioner and midwife	3
Attended by other person	2

The onsets of the cases occurred as follows :—

1 day after confinement	3 cases
2 days „ „	1 case
9 days „ „	1 case

The death occurred as follows :—

9 days after onset.

Four cases were removed to the Sanatorium for treatment.

Erysipelas.—Twenty-four cases were notified, and no deaths occurred.

The following were attributed as the causes: Cold 1, injury 1, no detected cause 22.

The location of the disease was as follows :—Face, head or neck 23 cases, hand 1.

One case was removed to the Sanatorium for treatment.

Acute Poliomyelitis.—(Infantile Paralysis), and **Cerebro-spinal Meningitis** (Spotted Fever) have, by an order of the Local Government Board been made compulsorily notifiable, but no cases were reported to me.

Eighty cases of **Chicken Pox**, and fifty-five cases of **Whooping Cough** were notified during the year, mainly by the School Attendance Officers.

Tuberculosis.—On the 1st February, 1913, all forms of tuberculosis became compulsorily notifiable by an order of the Local Government Board. Previously only Pulmonary Tuberculosis was included in this category.

The following notifications, divided into sexes and age groups, were received by me during the year :—

Age periods.	Number of Notifications on Form A.												
	Primary Notifications.												Total Notifications (i.e., including cases previously notified by other doctors)
	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and upwards	Total.	
Pulmonary Males ...	—	—	—	—	8	9	19	21	13	5	1	76	80
„ Females	—	1	2	2	7	8	18	7	3	—	—	48	53
Non-pulmonary Males ...	—	4	4	—	2	1	5	—	2	—	—	18	18
„ Females	—	5	4	1	3	2	5	1	2	—	—	23	24

	Number of Notifications on Form B.					Number of Notifications on Form C.	
	Primary Notifications.				Total Notifications (ic., including cases previously notified by other doctors).	Poor Law Institutions.	Sanatoria.
	Undre 5	5 to 10	10 to 15	Total.			
Pulmonary Males ...	—	2	—	2	2	2	1
„ Females	—	1	4	5	5	—	1
Non-pulmonary Males ...	—	2	—	2	2	—	—
„ Females	—	1	2	3	3	—	—

Except in cases where a desire to the contrary has been expressed by the Medical Attendant, these cases have all been visited either by myself or the Tuberculosis Officer. The number of visits paid was as follows :—

	Primary Visits.	Subsequent Visits.
Pulmonary Cases	112	118
Non-pulmonary Cases	26	3

The usual investigations have been made into the home conditions of the patients, and advice given on the various precautions which should be adopted to reduce the risk of infection to a minimum.

The wards at the Infectious Diseases Hospital sanctioned by the Local Government Board for the purpose, have been utilised for the treatment of Pulmonary Tuberculosis during the year. At the commencement of 1913, seven cases were in hospital. During the course of the year, 52 fresh cases were admitted, thus making fifty-nine cases treated during the year. Thirty-seven of the cases were discharged, and 5 died, and 17 cases remained in at the end of the year.

Our temporary complete scheme of dealing with tuberculosis came into operation on the 1st September, and may be briefly summarised as follows :—

The Corporation have undertaken to deal with all persons, insured and un-insured, on condition that the Insurance Committee hands over available funds to the Corporation.

A Dispensary has been established at the Health Department office, where treatment is administered to patients granted "Dispensary Treatment." Patients are examined here for other medical men, and also contacts with existing cases. Bacteriological work is also performed here.

The wards above referred to are utilised for the reception and treatment of cases, and provision will also be made in existing Curative Sanatoria for the reception of early cases. During the year one patient was sent to the Mendip Hills Sanatorium, and one to the Meathop Sanatorium.

Cases receiving Dispensary or Domiciliary treatment are visited periodically at their homes, and contacts are advised to attend at the Dispensary for examination.

The two nurses in the employ of the Health Department are engaged for part of their time as Tuberculosis nurses, visiting patients at home, and assisting the Tuberculosis Officer at the Dispensary.

Dr. A. D. Brunwin was appointed Tuberculosis Officer for Blackpool, and he commenced his duties on the 1st of September, attending on Tuesdays and Fridays to the patients at the Sanatorium, visiting the homes of the consumptive patients, and treating patients and examining contacts at the Dispensary at the Health Office.

Periodical disinfection is urged in all cases of consumption, especially when there is any change of room,

but this is not taken advantage of to anything like the extent which is desirable.

Forty-nine deaths from this disease occurred during the year. The following table gives the notified and fatal cases divided into sex and age groups.

Age periods.	Notifications.		Deaths.	
	Males	Females	Males	Females
Under 5 years	—	1	—	1
5 to 15 years	2	9	—	1
15 to 25 years	17	15	11	3
25 to 35 years	19	18	4	4
35 to 45 years	21	7	7	4
Over 45 years	19	3	11	3
Totals.....	78	53	33	16

The duration of the disease in the fatal cases is stated to be as follows :—

Under 6 months	8
Between 6 months and 1 year	7
„ 1 year and 2 years	14
„ 2 years and 3 „	8
„ 3 „ and 4 „	4
Over 4 years	4
No Information	4

Enquiries into the family history of the fatal cases of Phthisis revealed the following :—

One parent died of Phthisis	....	....	1 case
Son died of Phthisis	....	....	1 case
A brother or sister died of Phthisis	....		8 cases
A brother and 3 nephews died of Phthisis			1 case
Wife died of Phthisis	....	....	1 case
Father and other relatives died of Phthisis			2 cases
Mother and cousins died of Phthisis	....		1 case
Mother and two uncles died of Phthisis....			1 case
Two uncles died of Phthisis	....	....	1 case
Grandfather died of Phthisis	....	....	1 case
No family history of Phthisis	....	....	26 cases
No information	....	....	5 cases

Disinfection of the premises by means of a formalin spray has been offered in each case. In 42 cases disinfection was carried out by the Health Authority, and of the remaining seven cases I have no information.

The number of deaths and death-rates from Phthisis in the past thirteen years have been as follows :—

Year.	Number of Deaths.	Death-rate for Residents.
1901	37	0.73
1902	45	0.86
1903	35	0.74
1904	47	0.86
1905	51	0.92
1906	39	0.68
1907	50	0.86
1908	47	0.86
1909	45	0.73
1910	38	0.63
1911	51	0.83
1912	49	0.79
1913	49	0.76

Disinfection, &c. — The method adopted for disinfection of premises is by washing walls and furniture with a solution of perchloride of mercury, or spraying with a formalin vapour. Clothes, bedding, &c. are put through a steam disinfector at the Sanatorium. In the case of enteric fever the drains are flushed with a solution of chloride of lime, All typhoid excreta is collected in special pails and burned at the destructor. Disinfectants are given to houses where infectious disease exists.

SCHOOL CLOSURE 1913.

SCHOOL.	Cause.	CLOSED.	
		From	To
Devonshire Road Council School (Infants' Department) ...	Measles	October 20th	October 31st
St. John's School (Infants' Department)	do.	„ 20th	„ 31st
St. Kentigern's School (Infants' Department)	do.	„ 29th	November 7th

School Exclusions.—The following are the lines upon which we work with regard to the exclusion of infected children from school :—

SCARLET FEVER.

- 1.—PATIENTS: (a) Hospital Cases. Two weeks after discharge.
(b) Home Cases. Two weeks after disinfection.
- 2.—CONTACTS: (a) Hospital Cases. Two weeks after removal to Hospital.
(b) Home Cases. Two weeks after disinfection.

DIPHTHERIA.

- 1.—PATIENTS: (a) Hospital Cases. Four weeks after discharge.
 (b) Home Cases. Four weeks after disinfection.
- 2.—CONTACTS: (a) Hospital Cases. Two weeks after removal to Hospital.
 (b) Home Cases. Four weeks after disinfection.

ENTERIC FEVER AND ERYSIPELAS.

CONTACTS need not be excluded from School.

MEASLES.

- 1.—PATIENTS: Four weeks from onset.
- 2.—CONTACTS: (a) Infant Scholars. Three weeks from onset of last case.
 (b) Other Scholars:—
 I.—If had Measles. Not to be excluded.
 II.—If not had Measles. Three weeks after onset of last case.

WHOOPIING COUGH.

- PATIENTS: Six weeks, or as long as cough continues.
- CONTACTS: (a) Infant Scholars. Same period as patient.
 (b) Other Scholars:—
 I.—If had whooping cough. Not to be excluded.
 II.—If not had whooping cough. Same period as patient.

MUMPS.

- PATIENTS: Three weeks.
- CONTACTS: Not to be excluded.

CHICKEN POX.

- PATIENTS: Three weeks, or until all scabs have disappeared.
- CONTACTS: (a) Infant Scholars. Same period as patients.
 (b) Other Scholars. Not to be excluded.

The above periods are liable to alteration in individual cases on instructions from the Medical Officer of Health.

Bacteriological Laboratory. — The following work was done during the year:—

	Positive.	Negative.
Examination of swabs for diphtheria bacillus	34	179
„ sputum for tubercle bacillus	183	166
„ hairs for ringworm fungus...	63	23

The Sanatorium.—The number of cases of various diseases treated at the Sanatorium during the year will be seen in the following table:—

		Remaining in at end of 1912.	Admitted during 1913.	Discharged during 1913.	Died during 1913.	Average stay of non-fatal cases.	Average stay of fatal cases,	Remaining in at end of 1913.
Scarlet Fever.....	M.	2	47	41	1	45	7	7
	F.	4	44	42	1	44	3	5
Diphtheria	M.	2	16	16	1	45	1	1
	F.	2	15	11	4	42	4	2
Enteric Fever	M.	1	6	5	—	53	—	2
	F.	—	5	2	—	33	—	3
Measles	M.	—	29	29	—	17	—	—
	F.	—	22	21	—	14	—	1
Puerperal Fever	M.	—	—	—	—	—	—	—
	F.	—	4	3	—	32	—	1
Erysipelas	M.	—	—	—	—	—	—	—
	F.	—	1	1	—	10	—	—
Phthisis	M.	6	32	26	3	111	46	9
	F.	1	20	11	2	94	—	8
Other Diseases	M.	—	11	9	2	15	15	—
	F.	2	11	12	1	18	29	—
Totals.....	—	20	263	229	15	—	—	39

The cases classed as “ other diseases ” were as follows:—

Suspected Diphtheria...	...	...	...	...	6 cases.
,, Enteric Fever...	...	...	...	...	4 ,,
,, Scarlet Fever...	...	...	...	...	8 ,,
Croup	...	...	...	...	1 case.
Scabies	...	...	...	...	1 ,,
Heart Disease	...	...	...	...	1 ,,
Scarlet Fever from outside Borough	...	...	...	...	1 ,,

The total number of cases compares with previous years as follows:—

1913	263	1910	303	1907	312
1912	217	1909	477	1906	304
1911	213	1908	402	1905	270

The cost of the Sanatorium during the year, as nearly as can be ascertained, has been as follows:—

	£
Salaries	638
Provisions for Inmates, Staff, &c.	854
Gas, Coal, Water, Rates and Taxes, and Insurance	750
Furniture, Cutlery, Crockery, &c.	49
Building Repairs, Painting, &c.	34
Gardening	56
Materials for Uniforms	44
Medicine and Medical Appliances	103
Washing and Cleaning Materials	76
Advertising, Printing, and Stationery	31
Miscellaneous	70
	<hr/>
	2,705
Less Receipts from Inmates	790
	<hr/>
	1,915

Interest and Sinking Fund	...	...	...	...	1,414
Special Expenditure, Renewal of Household Furniture, &c.	...	...	...	...	71
Special Alterations to Wards	...	...	...	...	15
					<hr/>
					£3,415

By keeping a daily record of all the inmates of the Hospital (patients and staff) I have been able to calculate accurately the cost of the maintenance per head per week. This includes feeding only (groceries, greengroceries, milk, fish, bread and meat), and works out at an average for the year of 5s. 10d. per head per week. I consider this an extremely satisfactory figure. When it is remembered that all the articles of food are of the highest quality, the economy practised will be realised.

I beg to call your attention to the efficient manner in which the work at the Sanatorium has been carried out during the year, both as regards the administration of the Matron, Miss Procter, and the nursing duties of the Staff.

The treatment of consumptive patients at the Sanatorium has increased very considerably the duties and responsibilities of the matron and the nursing staff, and I have pleasure in testifying to the efficient manner in which these duties have been carried out.

PART III.

GENERAL SANITARY WORK.

Notification of Births Act, 1907.—This Act has been in force since February, 1908. Its main requirement is that every birth shall be notified to the Medical Officer of Health within thirty-six hours. The duty of notification falls upon the father of the child if he is in residence at the house at the time of the birth, or upon any person in attendance upon the mother at the time of, or within six hours after the birth. There is a penalty not exceeding twenty shillings for failure to comply with this Act. The object of the Act is to give the Sanitary Authority an opportunity of advising upon the rearing of infants as soon after birth as is possible.

1,043 births occurred in Blackpool during 1913 and were registered under the Registration Acts within the specified period of six weeks. Of these, 894, or 86 per cent. were notified to me under the Notification of Births Act. The remaining 14 per cent. were not notified because of ignorance of the requirements of the Act, or deliberate negligence.

The following two tables will reveal in a clear manner the particulars of the births :—

COMPARATIVE TABLE OF BIRTHS REGISTERED AND NOTIFIED.

	Registered under the Registration of Births Acts.	Registered Births Notified to the Medical Officer of Health under Notification of Births Act.
Doctor in attendance at Birth	382	242
Doctor and Midwife	276	271
Midwife	383	379
Other Persons	2	2
No Information	—	—
Totals.....	1,043	894

BIRTHS NOTIFIED TO THE MEDICAL OFFICER OF HEALTH.

Notified by	Notification of Births	Notification of Still Births
Doctor	193	19
Doctor & Midwife ...	96	7
Midwife	501	19
Others	62	1
Totals.....	852	46

The visits under this Act have been carried out by the Health Visitor under the supervision of the Medical Officer of Health.

Advice has been given on the storage of food and on the feeding and clothing of infants, and a special point has been made of urging upon mothers the importance of persevering with the breast milk even if it has to be supplemented with cow's milk, suitably prepared. Suitable pamphlets and booklets embodying this advice have also been left at most of the houses.

Miss Margaret Waring has acted as Health Visitor throughout the year, and has supplied me with the following statement upon her work :—

“ 1,089 first visits were paid to notified births, and
 “ 1,962 re-visits paid monthly, fortnightly, or weekly, as
 “ the cases required. The number of breast-fed infants
 “ was 538, breast and bottle-fed 127, and bottle-fed 184.
 “ The total number of boat-shaped bottles used was 254,
 “ and of long tube bottles 17. The latter are gradually
 “ falling into disuse, except by a certain class of indo-
 “ lent people who will not take the trouble to hold the bottle
 “ while the child feeds.

“ With regard to artificial feeding, one has always the
 “ same difficulty to contend with, and that is to get people
 “ to take the necessary precautions to secure a more sterile
 “ food. Since the summer epidemic of Diarrhœa some
 “ people have been even more prejudiced against the use of
 “ cow's milk, and I have had a difficulty in getting them to
 “ start it again. It has also given many to understand the
 “ immense advantages which a baby gets if it is nursed on
 “ the breast, and it is to be hoped that mothers will make
 “ a greater effort to persevere in breast-feeding.

“ Many people neglect the trifling signs of illness at an
 “ early stage, and then expect a bottle or two of medicine
 “ to effect a cure in a few days, and as the children are

“ often taken to Doctors’ surgeries the doctors do not have
 “ an opportunity of becoming familiar with the children’s
 “ surroundings and judging of the errors of management.

“ In two houses in each of which two deaths occurred,
 “ I had reason to believe the deaths were caused more or
 “ less directly by neglect and faulty feeding.

“ Nine cases of general neglect of houses and
 “ children have been reported to the local Inspector of the
 “ N.S.P.C.C.

“ Fifty-five cases were referred to the Ladies’ Sick
 “ Poor Association. The decrease in the number as
 “ compared with previous years is owing to the State Insur-
 “ ance and maternity benefit attached to it.

“ I find that most people readily understand and appre-
 “ ciate the visiting and are grateful for the advice given. I
 “ am constantly asked if I will call again.

“ There were 73 births in houses not suitable for visit-
 “ ing, and in 32 cases no information was available. Births
 “ at the Kirkham Workhouse are frequently difficult to
 “ trace, fictitious addresses being given.”

It is with much pleasure I acknowledge the material help which has been extended to cases referred to them by the visiting ladies of the Sick Poor Association. Each year I become more impressed with the value of the social work carried out by this Association. As long as we have the needy poor with us, then work of the nature of that of the Association must be looked upon as an integral and indispensable portion of our social fabric. I have long ago formed an opinion that this and similar bodies should be subsidised by central or local funds, so that each person will then pay his or her contribution, and the maintenance

will not be left to comparatively few who now subscribe. The ladies who now do so much voluntary work would be relieved from the tedious and unpleasant duty of "Collecting" and would be able to devote more time to the more satisfactory work of seeking out suitable cases and applying the funds in a proper manner.

MIDWIVES' ACT, 1902.

Total on Register 1st January, 1913.....	29
No. who sent in Form VIII. of intention to practise	28
No of new Midwives admitted to Roll during 1913.....	1
No. of Midwives who left the district during 1913.....	1
No. of Midwives who died during 1913....	1
Change of address reported to Central Midwives' Board	4
Notifications received from Midwives :—	
Sending for Medical Help	10
Still-Births.....	27
Death of Child	—
Death of Mother	1
Visits paid by the Medical Officer of Health or Health Visitor.....	61

Of the 29 midwives on the roll on the 1st January, 1913, 20 are certified because they were in practice for one year prior to the passing of the Act; 2 have the L.O.S. certificate; 2 have the St. Mary's Hospital Manchester,

certificate ; 1 has a certificate from the Ladies' Charity Lying-in Hospital, Liverpool ; and 4 the C.M.B. certificate.

Three cases of puerperal fever occurred in the practice of midwives during 1913. The midwives were temporarily suspended until their bags, etc., were disinfected.

Sixty-one visits were paid by the Medical Officer of Health and the Health Visitor during 1913 in order to inspect bags and registers.

Education (Administrative Provisions) Act, 1907.—This Act is administered by the Education Committee, but as the work has such an intimate relationship with Public Health, I do not think an Annual Health Report would be complete without some reference to it. I have therefore prepared the following brief summary of the work during the past year:—

The Medical Officer of Health is the School Medical Officer, and Dr. Martha Adams has acted as Assistant School Medical Officer, carrying out all the clinical work. The following children were medically examined : —

Entrants, 1,248 ; Leavers, 538 ; 8 year olds, 673 ; Special Cases (including children with suspected defects) 1,604 ; making a high total of 4,063. The attention of the Education Committee is called to the value of " Open-Air Classes " for delicate children. There has been a very marked improvement in the cleanliness of the children (especially as regards vermin). The following cases of infectious disease were discovered during the course of inspection :—Diphtheria 2, Scarlet Fever 1, Measles 3,

Whooping Cough 3, Mumps 9. A treatment clinic is in operation at the Education Offices for certain minor ailments, and 433 children received treatment during the year. 77 cases of children with defective eyesight were examined by Dr. Sprawson and provided with spectacles at the cost of the Education Authority. It is proposed to inaugurate a Dental Clinic, and to employ the services of a part time School Dentist for fifty half days in the year.

No structural alterations of any importance were carried out at the Elementary Schools during the year.

Factory and Workshop Act, 1901.—There are 191 factories in the Borough, and through the courtesy of Mr. Kellett, the Inspector of Factories for the district I am able to give the following classifications:—

BUILDING AND FURNISHING

TRADES :

Joinery, Sawmill, and	
Cabinet Works	24
Stone Works and Mortar	
Mills	8
Brick Works	5
Coachbuilding and	
Wheelwrights	5
	—42

PREPARATION OF FOOD, &c. :

Bakehouses	23
Sausage Works	5
Sugar Boiling	2
Ice Cream Making	1
Dairies	—
Aerated Water Manufac-	
turing, Beer Bottling,	
and Brewing	20
Other Provisions	—
	—51

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Forward 93

WEARING APPAREL :

Dress, Millinery, and	
Tailoring	3
Bootmaking and Repair-	
ing	10
	—13

LETTERPRESS PRINTING :

Letterpress Printing and	
Bookbinding	17
	—17

ENGINEERING :

Engineering Works and	
Smithies	10
Cycle and Motor Car	
Works	6
Tool Making	1
Rolling Stock	1
	—18

LIGHTING :

Electricity Generating	10
Gas Works	1
	—11

Forward 152

Forward	152	Forward	165
LAUNDRIES :		Wire Mattresses	2
Laundries and Carpet-		Picture Frame Making	1
Beating Works... ..	12	Firewood Cutting ...	5
Bedding, &c., Cleaning		Cigar Making	1
Works	1	Provender & Corn Mills	8
	—13	Watch Repairs	2
MISCELLANEOUS :		Cutlery Repairs	1
Art Needlework	1	Paints	1
Electro-Plating	1	Cameras	1
Photograph Printing ...	1		—26
Toy Making	1		
Forward	165	Total	191

As regards workshops, there are 556 in all registered in the Borough, classified as follows :—

CLOTHING, &c. :		Forward	473
Milliners	31	Black and Whitesmiths...	11
Tailors	36	Cycle Repairs	7
*Dress	62		—23
Boots and Clogs	77	JEWELLERY, &c. :	
Hosiery	1	Watch Repairing and	
	—207	Jewellery	7
FOOD AND DRINK :		Photo Mounting and Pic-	
Bakers & Confectioners	197	ture Frame Making...	16
Sugar Boiling	2		—23
Beer Bottling	1	OTHER TRADES :	
	—200	Hand Laundries	6
BUILDING TRADES, &c. :		Cigar Manufacturers ...	1
Plumbing and Painting...	24	Brush Manufacturer ...	1
Joiners	18	Printers & Bookbinders...	8
	—42	Electrical Appliances ...	3
FURNITURE :		Basket Manufacturer ...	1
Cabinet Making and Up-		Monumental Mason...	1
holstery	24	Motor Garages... ..	7
	—24	Hardware Repairing ...	1
CONVEYANCES, &c. :		Furrier	2
Wheelwrights & Coach		Firewood Cutting	2
Builders	1	Leaded Lights... ..	1
Saddlery	4	Paper Blinds	1
		Floor Polish	1
		Artificial Stone	1
			—37
Forward	473		556

*NOTE.—When Millinery and Dress are made on the same premises, they are classified under "Dress."

The following alterations were made in the numbers during the year :—

					Workshops discontinued.	Workshops added.
Milliners ...	...	...	...	...	2	5
Dressmakers ...	...	...	...	...	13	10
Photo Mounting...	...	...	...	...	2	1
Tailors ...	...	...	...	...	8	7
Joiners ...	...	...	...	...	4	2
Shoemakers ...	...	...	...	...	3	6
Cycle Repairers ...	...	...	...	...	2	1
Cabinet Makers ...	...	...	...	...	2	4
Black and Whitesmith	...	...	...	...	1	—
Printers ...	...	...	...	...	2	1
Wheelwright ...	...	...	...	...	1	—
Hosiery ...	...	...	...	...	1	—
Beer bottling ...	...	...	...	...	2	—
Cigar manufacturer ...	...	...	...	...	1	—
Leaded lights ...	...	...	...	...	1	—
Underclothing and baby linen	...	...	...	...	1	—
Wire mattress manufacturer	...	...	...	...	1	—
Hand laundry ...	...	...	...	...	—	1
Plumbers and painters	...	...	...	...	—	2
Watchmakers ...	...	...	...	...	—	1
Furrier ...	...	...	...	...	—	1
Motor garages ...	...	...	...	...	—	5
Artificial stone ...	...	...	...	...	—	1
Floor polish ...	...	...	...	...	—	1
Paper blind manufacturer	...	...	...	...	—	1
Bakers and confectioners	...	...	...	...	—	16

I now submit in the official form required by the Home Office, the following statistical report of the proceedings which have been taken in connection with the supervision of factories, workshops, and workplaces of the Borough in regard to those matters placed by the Act under the control of the local Sanitary Authority.

1.—INSPECTION OF FACTORIES, WORKSHOPS AND WORKPLACES.

(Including Inspections made by Sanitary Inspectors
or inspectors of nuisances).

PREMISES.	Number of		
	Inspections	Written Notices	Prosecutions
FACTORIES..... (Including Factory Laundries)	16	2	—
WORKSHOPS (Including Workshop Laundries)	764	24	—
WORKPLACES (Other than Outworkers' Premises included in Part 3 of this Report)	254	—	—
TOTAL.....	1,034	26	—

2.—DEFECTS FOUND IN FACTORIES, WORKSHOPS & WORKPLACES.

PARTICULARS	Number of Defects					Number of Prosecutions	
	Not Remedied 1912	Found	Remedied 1913	Not Remedied 1913	Referred to H.M. Inspector		
NUISANCES UNDER THE PUBLIC HEALTH ACTS :—							
Want of cleanliness	13	38	49	2	—	—	
Want of ventilation	—	5	5	—	—	—	
Overcrowding	—	3	3	—	—	—	
Want of drainage of floors... ..	—	—	—	—	—	—	
Other nuisances	5	53	49	9	—	—	
Sanitary	{	insufficient	2	5	7	—	—
Accommodation		unsuitable or defective	—	2	2	—	—
		not separate for sexes	—	—	—	—	—
OFFENCES UNDER THE FACTORY & WORKSHOP ACT :—							
Illegal occupation of underground bakehouse (s. 101)... ..	—	—	—	—	—	—	
Breach of special sanitary requirements for bake-houses (ss. 97 to 100)	—	11	11	—	—	—	
Other offences (Excluding offences relating to outwork, which are included in Part 3 of this Report.)	—	—	—	—	—	—	
TOTAL	20	117	126	11	—	—	

NATURE OF WORK.	OUTWORKER'S LISTS, SECTION 107.										OUTWORK IN UNWHOLE-SOME PREMISES, SECTION 108.		OUTWORK IN INFECTED PREMISES SECTIONS 109, 110.							
	Lists received from Employers.						Prosecutions.				In- stances served.	Pro- secutions served.	In- stances.	Pro- secutions made (s. 110).	Pro- secutions (s. 109, 110)					
	Twice in the year. Once in the year.						Failing to keep or permit in- specu of lists	Failing to send lists.	(10)	(11)						(12)	(13)	(14)	(15)	(16)
	Lists (2)	Outw'krs Con- trac- tors.		Lists (4)	Lists (5)	Outw'krs Con- trac- tors.															Work- men (7)
		(3)	(6)																	
(1)	42	42	53	7	3	4	—	—	—	—	—	—	—	—	—	—				
Wearing Apparel :—																				
(1) Making, &c.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
(2) Cleaning and washing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Household linen	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Lace, lace curtains, and nets	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Curtains and furniture hangings	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Furniture and upholstery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Electro-plate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
File making	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Brass and brass articles	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Fur pulling	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Cables and chains	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Anchors and grapnels	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Cart gear	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Locks, latches, and keys	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Umbrellas, &c.	2	2	4	—	—	—	—	—	—	—	—	—	—	—	—	—				
Artificial flowers	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Nets, other than wire nets	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Tents	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Sacks	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Racquet and tennis balls	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Paper, etc., boxes, paper bags	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Brush making	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Pea picking	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Feather sorting	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Carding, &c., of buttons, &c.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Stuffed toys	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Basket making	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Other scheduled trades	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Total	44	44	57	7	3	4	—	—	—	—	—	—	—	—	—	—				

Inspections of Outworkers' premises ... 81

Addresses of Outworkers received from other authorities ... 2
do. forwarded to other authorities ... 23

4.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year.		Number.
Important class of workshops, such as workshop bakehouses, may be enumerated here.	Making of wearing apparel	207
	Workshop bakehouses	197
	Preparation of other foods	3
	Building trades.	42
	Furniture making, etc.....	24
	Conveyances	23
	Other Trades	60
Total number of workshops on Register.....		556

5.—OTHER MATTERS.

CLASS.	Number.
Matters notified to H.M. Inspector of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (s. 133)	3
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5)	Notified by H.M. Inspector 13
	Reports (of action taken) sent to H.M. Inspector ... 10
Other	—
Underground bakchouses (s. 101) :—	
Certificates granted during the year	—
In use at the end of the year	6

It will be observed from the preceding tables that 1,034 visits were paid by the Inspectors during the year, and the sanitary conditions have been kept under close supervision. This total includes 254 visits to workplaces, but not the visits to slaughter-houses. 117 defects were detected, and of these 106 were remedied, leaving 11 still requiring attention at the commencement of 1914. Circular letters were sent out at the beginning of February and August, asking for lists of outworkers. The premises of the outworkers were visited twice during the year, and were found in a satisfactory condition.

Supervision of food supplies.—This has been carried out during the year by Inspector Newby, under the direction and supervision of the Medical Officer of Health. The following food places exist in the Borough:—

Butchers' shops	...	...	...	...	...	117
Frozen meat shops	...	...	...	...	...	27
Fish and chip shops...	...	...	...	...	...	97
Fish dealers (mostly also selling fruit and game)						41
Provision shops (mostly also selling fruit)	...					260
Provision shops (selling also butchers' meat)...						26
Fruit shops	...	...	...	...	...	72
Restaurants where food is cooked				...	...	61
Tea rooms	...	...	...	...	...	18
Oyster shops	...	...	...	...	...	15
Confectioners' and sweet shops	...	...		...	...	238
Fruit shops (selling also butchers' meat)				...		3

It is difficult to keep an accurate list of provision dealers for the entire year, as during the summer the list is so greatly augmented by meat stalls, fish carts, temporary tenants, etc., but it is quite evident that the list is increasing gradually year by year, in order to cope with the increasing population.

The following visits were paid during the year :—

Milkshops and dairies	...	...	...	...	198
Cowsheds in the Borough	...	...	...	...	89
Cowsheds out of the Borough	...	...	...	...	—
Ice cream stalls	...	...	...	...	67
Ice cream workshops	...	...	...	...	129
Public slaughter-houses	...	...	...	...	208
Other slaughter-houses in the Borough...	...	...	...	...	381
Other slaughter-houses out of the Borough	...	...	...	...	10
Butchers' shops	...	...	...	...	973
Other shops	...	...	...	...	1,341
Restaurant kitchens	...	...	...	...	125
					—
					<u>3,521</u>

In all cases where vendors of food have any doubt as to the quality of any article they are invited to send to the Health Office, when the Medical Officer of Health or Food Inspector will at once call and pass an opinion on the article. This arrangement continues to be largely taken advantage of.

During the year the following articles were destroyed as unfit for food (not including meat from the Public abattoirs):—

18lbs. Grapes.
 5 barrels Plums.
 20 Cases of Californian Pears.
 84lbs. of Plaice.
 1 box of Kippers.
 42lbs. of Crayfish.
 2 cases of Crayfish.
 3 cwts. of Codfish.
 5 Ox Livers.
 22lbs. Frozen Beef.
 36 Rabbits.
 2 cwts. of Ox Feet.
 2 Cows' Hearts.
 2 Cows' Livers.
 2 Cows' Kidneys.
 2 pieces of Skirt.
 42lbs. of Mutton.
 112lbs. of Tripe.

There were destroyed by Magistrates' order :—

- (1) 34 Frozen Chickens.
- (2) One Pig (148 lbs.)

In the first case, the frozen chickens were found in a stable by the Food Inspector and were unfit for food. Summonses were issued against the owners but were not served owing to the fact that fictitious addresses in Manchester were given. In the second case, the carcase of a pig was found hanging in a Pork Butcher's shop by the Meat Inspector, and on examination was found to be tubercular. Legal proceedings were instituted against the owner but were withdrawn owing to the critical state of his health. The pig was one which was brought in ready dressed from the country, and the circumstances of the case have brought to our minds very forcibly some defects

in our system of Inspection. It is very desirable that we should have established a "Clearing House" for meat of this description, where it can be examined, stamped and passed. We exercise a very rigid supervision over meat killed within the Borough, and the butchers should be protected in a similar way in regard to carcasses brought in ready dressed. In this case the viscera were not brought with the carcase, and as they would have shown evidence of disease much more prominently than did the carcase, butchers would be well advised in insisting upon seeing them prior to acceptance of carcase.

Slaughter-Houses, and inspection of Meat.—

At the commencement of the year there were in the Borough the Corporation abattoirs and two other private slaughter-houses.

The system of letting private premises at the abattoirs greatly facilitates the inspection of meat, and also obviates the occurrence of the nuisance inseparably attached to such buildings when scattered over the town. Eight of the private premises were let to the following: Mr. J. Cocker, Mr. T. Holroyd, Messrs. Holt and Hull, Messrs. Valiant and Rainford, Messrs. Garsden and R. Hull, Mr. H. O. Laycock, the Argenta Meat Co., and the Co-operative Society. Other premises were let for hide, skin, and fat warehouses, for gut scraping, for tripe boiling and for blood drying. The public slaughter-houses at the abattoirs were regularly used by a considerable number of butchers during the year.

The following animals were slaughtered at the abattoirs :—

Cows ...	...	...	...	...	...	...	156
Heifers	...	...	...	...	...	...	1,864
Bullocks	...	...	...	...	...	...	542
Bulls ...	...	...	...	...	...	...	10
Calves...	...	...	...	...	...	...	814
Sheep ...	...	...	...	...	...	..	43,346
Pigs ...	...	...	...	...	...	...	651
							<hr/> 47,383 <hr/>

The following were surrendered and destroyed during 1913, from the Corporation abattoirs :—

- (A.) Tuberculosis :
- 6 Heifers (2,216 lbs.)
 - 1 Cow (554 lbs.)
 - 1 Calf (73 lbs.)
 - Viscera of 5 Heifers
 - Viscera of 3 Cows.

- (B.) Suffocated :
- 5 Sheep (204 lbs.)

- (c.) Inflammation :
- 1 Pig (100 lbs.)

The following were surrendered and destroyed from other private slaughter houses :—

- (1) Within the Borough :
- 1 Heifer and Viscera (542 lbs.)—Tuberculosis.
 - Lungs of Heifer—Slight tuberculosis.
- (2) Outside the Borough :
- 1 Heifer (516 lbs.)—Tuberculosis.
 - 1 Heifer (392 lbs.)—Do.
 - 1 Pig (84 lbs.)—Inflammation.
 - Viscera of Heifer—Slight tuberculosis.

Destructive Insects and Pests Act, 1877 and 1907—Inspector Newby has been appointed Inspector under these Acts and had under supervision during the year the gardens and allotments. Nineteen cases of wart disease of potatoes were discovered, and notices were served upon the occupiers of the premises requiring them to comply with the provisions of the Wart Diseases of Potatoes Order, 1912, before a license was granted for the planting of potatoes again in the same ground.

The Milk Supply.—All efforts to maintain the wholesomeness of the milk supply have been made during the year under review. In the first place, the milk of healthy cows only should be used for human consumption; in the second place, the cows and cowsheds should be kept scrupulously clean; and in the third place, the process of milking and the distribution of milk should be carried out in such a manner as to prevent the introduction of any extraneous matter into the milk. As regards the first two, these have been well supervised in the cowsheds within the Borough. It must, however, be remembered that a large portion of our milk comes from farms without the Borough, over which we have no control, or power of inspection—in fact, the taking of samples of such milk, under the Sale of Food and Drugs Acts, is the only means we have of exercising any supervision over it. My remedy for such an anomalous state of affairs is that a Sanitary District receiving milk from a farm within another district should be empowered to require from the vendor of the milk a certificate from the Sanitary Authority where he resides as to the healthiness of his cows, &c. I urge upon vendors the

importance of carrying out all precautions to avoid the introduction of sediment into the milk. These precautions should include the grooming of cows, cleansing of the udders prior to milking, and the cleansing of hands, and wearing of clean overalls by the milkers.

While the addition of extraneous matter such as dust, etc. to milk is an extremely important matter, yet the greatest danger in milk is its risk of conveying tubercular disease, and our supervision over it in this respect has been considerably augmented during the year by the provisions of the Tuberculosis Order, 1913. This is an order under the Contagious Diseases Animals Acts, and it was resolved that its provisions should be carried out by the Health Department. In so far as it effects milk, the order may be briefly summarised as follows:—

The owner or person in possession of a cow with tuberculosis of the udder, or giving tubercular milk, or with tuberculosis with emaciation is to give notice of same, and the authority are entitled to have such animal slaughtered or segregated and its milk kept from human consumption. Certain compensation is payable to the owner. Two serious defects exist in this order, namely: that action is taken on receipt of information and that the tubercular animals are not sought out, and also that it does not refer so far as we are concerned, to animals outside the borough whose milk is brought in for sale. I pointed out these two defects to the Health Committee, and the Committee unhesitatingly resolved to extend their scope of work in order to cover them. It was decided that our Veterinary Inspector should visit all the Cowsheds within the Borough

four times a year and examine all the cows in them, and I was also authorised to take samples of milk brought into the Borough for sale, and have them bacteriologically examined for tubercule bacilli.

Messrs. Hutchinson and Walker the Veterinary Inspectors have submitted to me the following statement upon the work carried out by them during the year :

To the Medical Officer of Health.

Dear Sir,—

TUBERCULOSIS ORDER, 1913.

We beg to submit our report for Veterinary Inspection under the Tuberculosis Order. During the quarter ending December 31st, 1913, we have paid 66 visits to the 46 different cow-keepers in the Borough of Blackpool. We have inspected 575 bovine animals ; 399 of these are milking cows, the remaining 176 are not milking, and include bulls and young stock ; 6 beasts have been seized and destroyed under the Order, and on post-mortem examination all have proved to be suffering from advanced tuberculosis ; these include 5 milking beasts and 1 bull.

Yours truly,

pp. HUTCHINSON & WALKER,

TOM WALKER.

I have had four samples of milk examined by Prof. Delepine of Manchester, and he reports that they are all free from tubercule bacilli.

The following is a list of the milksellers in the Borough:—

Dairies selling by retail	...	...	...	...	11
Provision dealers selling by retail	...	...	...	...	64
Butchers selling by retail	...	...	...	...	8
Persons meeting farmers' carts and delivering milk direct, not taking it home...	...	...	...	...	17
Tea rooms and sweet shops selling in glasses as refreshments when asked for	...	...	...	...	81
Dining rooms selling milk in glasses when asked for	...	...	...	...	11
Selling sterilised milk	...	...	...	...	2
					<hr/>
					194
					<hr/>

No. of cowsheds in the Borough during 1913, the occupiers of which sold milk during the year	42
Farmers outside the Borough bringing milk into the Borough	...
Ice cream dealers	...
	163
	148

During 1913, as seen on page 86, Mr. Newby paid in all 89 visits to cowsheds within the Borough, 198 to milkshops and dairies, 196 to ice-cream stalls and work-places, and 125 to restaurant kitchens.

Sixty-four milk dealers, and 39 ice-cream dealers applied for registration during the year.

Sale of Food and Drugs Acts.—Mr. Thomas Sanderson, the Chief Sanitary Inspector, is the Sampling Officer under these Acts. One hundred and ninety-five samples were taken during 1913, of which the following are details :—

INFORMAL SAMPLES.			Nature of Sample.	FORMAL SAMPLES.		
NUMBER.				NUMBER.		
Taken	Not Genu- ine.	Reference Numbers.		Taken	Not Genu- ine.	Refrence Numbers.
...	Arrowroot	1	...	...
1	Barley, Pearl ... ..	...	...	...
...	Brawn... ..	1	...	...
18	4	205, 281, 322, 324	Butter... ..	23	7	221, 240, 241, 315, 341, 364, 367
...	Cheese... ..	2	1	202
2	Cocoa ... ..	...	...	...
15	Coffee	8	...	...
...	Cream	6	...	...
...	Flour	1	...	...
...	Gregory Powder	1	...	...
...	Honey	1	...	...
1	Jam (Damson)... ..	...	...	...
1	Jam (Raspberry)	...	...	...
...	Lard	5	...	...
2	2	270, 282	Linseed Meal	2	1	316
1	1	393	Margarine	1	1	383
...	Milk	71	12	234, 235, 260, 261, 264, 284, 291, 292, 304, 307, 381, 382
1	Milk of Sulphur ... ..	...	...	...
1	Mustard	1	...	...
1	Peas (Preserved) ... ..	...	...	...
3	Pepper... ..	...	...	...
4	Pepper (White)	3	...	...
1	Quinine (Ammoniated Tincture)	..	...	...
...	Rice (Ground)	1	...	...
1	Sal Volatile, Spirit of ... ..	...	...	...
...	Shrimps (Rough)	1	...	...
...	Shrimps (Picked)	1	...	...
...	Shrimps (Potted)	4	1	2.3 (only 16 5 grains per lb.)
...	Vinegar (Malt)... ..	5	1	365.
2	Whiskey ... ..	...	...	...
...	Whiskey (Scotch)	1	...	...
55	7			140	24	

BUTTER.

SAMPLE No. 205.—Informal sample. Certified to contain Boracic Acid not less than 29 grains per pound. A formal sample (240) subsequently taken.

SAMPLE No. 221.—Formal sample. Certified to contain 9.5 grains per pound Boracic Acid. No action was taken.

SAMPLE No. 240.—Formal sample. Certified to contain Boracic Acid 4.5 grains per pound. No action was taken.

SAMPLE No. 241.—Formal sample. Certified to contain Boracic Acid 15 grains per pound. No action was taken.

SAMPLE No. 281.—Informal sample. Certified to contain Boracic Acid not less than 24 grains per pound. Formal sample will be taken.

SAMPLE No. 315.—Formal sample. Certified to contain Boracic Acid not less than 11 grains per pound. No action was taken.

SAMPLE No. 322.—Informal sample. Certified to contain Boracic Acid 41 grains per pound. The vendor stated that she purchased the butter from a person whom we have not been able to find. A further sample was taken from her (No. 341), but it was not from the same consignment.

SAMPLE No. 324.—Informal sample. Certified to contain Boracic Acid 13.5 grains per pound. No action was taken.

SAMPLE No. 341.—Formal sample. Certified to contain Boracic Acid 12.5 grains per pound. No action was taken.

SAMPLE No. 364.—Formal sample. Certified to contain Boracic Acid 8 grains per pound. No action was taken.

SAMPLE No. 367.—Formal sample. Certified to contain Boracic Acid 11 grains per pound. No action was taken.

CHEESE.

SAMPLE No. 202.—Formal sample. Certified to contain 43.5 per cent. water, 28.5 per cent. fat, 24.5 per cent. curd, &c., 3.5 per cent. ash, and contained excess of not less than 3 per cent. of water. No action was taken.

LINSEED MEAL.

SAMPLE No. 270.—Informal sample. Certified to be deficient of not less than 3 per cent. of its oil. A formal sample will be taken.

SAMPLE No. 282.—Informal sample. Certified to be deficient of not less than 6 per cent. of its oil. A formal sample will be taken.

SAMPLE No. 316.—Formal sample. Certified to contain Camphor not less than 70 grains per pound. The vendor was cautioned by letter.

MARGARINE.

SAMPLE No. 383.—Formal sample. Certified to contain Boracic Acid 16 grains per pound. No action was taken.

SAMPLE No. 393.—Informal sample. Certified to contain Boracic Acid 21 grains per pound. No action was taken, but further samples will be taken.

MILK.

SAMPLE No. 234.—Formal sample. Certified to contain fat 2.86 per cent., solids not fat 8.56 per cent., total solids 11.42, and deficient of 4.5 per cent. of its fat. No action was taken.

SAMPLE No. 235.—Formal sample. Fat 2.88 per cent., solids not fat 8.57 per cent., total solids 11.45 per cent., and deficient of 4 per cent. of its fat. No action was taken.

SAMPLE No. 260.—Formal sample. Fats 2.85 per cent., solids not fat 9.25 per cent. Certified to be deficient of not less than 5 per cent. of its fat. No action was taken.

SAMPLE No. 261.—Formal sample. Fats 2.82 per cent., solids not fat 8.67 per cent. Certified to be deficient of not less than 6 per cent. of its fat. No action was taken.

SAMPLE No. 264.—Formal sample. Fats 4.8 per cent., solids not fat 8.0 per cent. Certified to be deficient of not less than 5.5 per cent. of its non-fatty solids. Owing to the high percentage of fat no action was taken. It was a sample of afternoon milk.

SAMPLE No. 284.—Formal sample. Fats 2.64 per cent., solids not fat 9.42 per cent. Certified to be deficient of not less than 12 per cent. of its fat. A special report was submitted by the Sampling Inspector on this case, and it was decided not to take legal proceedings.

SAMPLE No. 291.—Formal sample. Fats 2.94 per cent., solids not fat 8.79 per cent. Certified to be deficient of not less than 2 per cent. of its fat.

SAMPLE No. 292.—Formal sample. Fats 2.93 per cent., solids not fat 8.92 per cent. Certified to be deficient of not less than 2 per cent. of its fat.

SAMPLE No. 304.—Formal sample. Fats 2.90 per cent., solids not fat 8.52 per cent. Certified to be deficient of not less than 3 per cent. of its fat. A warning letter was sent to the vendor.

SAMPLE No. 307.—Formal sample. Fats 2.85 per cent., solids not fat 9 per cent. Certified to be deficient of not less than 5 per cent. of its fat. A warning letter was sent, and the vendor was seen by the Sampling Inspector.

SAMPLE No. 381.—Formal sample. Certified to contain added water 5.5 per cent. The manager of the firm from which the milk was purchased was interviewed. Two further samples were taken during the course of delivery to the firm who sold sample No. 381, and were both genuine.

SAMPLE No. 382.—Formal sample. Certified to contain added water 15 per cent. Legal proceedings were instituted, and a fine of £2 and 18/6 costs was inflicted.

SHRIMPS.

SAMPLE No. 223.—Formal sample. Certified to contain Boracic Acid 16.5 grains per pound. No action was taken.

MALT VINEGAR.

SAMPLE No. 365.—Formal sample. Certified to be deficient in Acetic Acid to the extent of 10 per cent. After purchase the vendor saw the Sampling Inspector and produced the following invoice: "One Keg Vinegar for own use for pickling." Owing to the small deficiency in Acetic Acid, legal proceedings were not instituted, but a warning letter was sent to the vendor.

The difficulty of checking the addition of Boracic Acid to food stuffs has been very acutely felt during the year. It is not easy to bring forward definite and conclusive evidence of the harmful nature of the drug to the general public, especially as certain people (who are in my opinion abnormal) are prepared to come forward and state that they are able to ingest unlimited quantities of it without any harmful result.

The Health Committee, acting jointly with the Health Committee of Southport passed the following resolution :—"That the Local Government Board be urged

to frame and issue regulations governing the addition of Boracic Acid to food stuffs." A copy of this resolution was sent to the Local Government Board, and the Councils of other County Boroughs in England were requested to pass similar resolutions and forward them to the Board. With but few exceptions, these towns followed our lead, but we have not yet heard what action the Board have taken in the matter.

The **Milk and Cream Regulations** came into operation in October, 1912. They have considerably strengthened our hands in supervising the milk supply. The two main features are (1) that no preservatives shall be added to milk, and (2) that the addition of boracic acid to cream shall be declared by a label of specified form which also states the maximum amount of the preservative.

The following work was done under these regulations during the year :—

1. Milk and Cream not sold as Preserved Cream :

	(a)	(b)
	Number of samples examined for the presence of a preservative	Number in which a preservative was reported to be present.
Milk ...	71	—
Cream ...	—	—

2. Cream sold as Preserved Cream :

- (a) Instances in which samples have been submitted for analysis to ascertain if the statements on the label as to preservatives were correct—

(I.) Correct statements made	...	...	6
(II.) Statements incorrect...	...	...	—
			—
Total	...	...	6

(b) Determinations made of milk fat in cream sold as preserved cream—

(I.) Above 35 per cent.	...	...	6
(II.) Below 35 per cent.	...	...	—
			—
Total	...	...	6

(c) Instances where (apart from analysis) the requirements as to labelling or declaration of preserved cream in Article V. (1) and the proviso in Article V. (2) of the Regulations have not been observed ... Nil.

(d) Particulars of each case in which the Regulations have not been complied with, and action taken ... Nil.

3. Thickening substances. Any evidence of their addition to cream or to preserved cream. Action taken where found ... Nil.

4. Other observations, if any:

According to Article VI. of the Regulations the Blackpool Corporation appointed that in cases of breach of the Regulations the Medical Officer of Health shall, in writing, ask the vendor to submit in writing any explanation he may desire to bring forward.

Fertilisers and Feeding Stuffs Act, 1896.—

Mr. T. Sanderson, the Chief Sanitary Inspector, is the Official Sampling Officer under this Act. No applications were received by him during the year to have samples analysed.

Rag Flock Act, 1912.—This very useful Act came into operation in July, 1912. Stated briefly, the Act makes it illegal for any person to sell or have in his possession for sale, flock manufactured from rags which contain more than 30 parts of chlorine in 100,000 parts. Three samples of flock were analysed by the Public Analyst in 1913, and in one instance the regulation amount of chlorine was exceeded, and was certified to contain 240 parts per 100,000. This sample was one taken on request, and the use of the flock was forthwith discontinued.

Inspection of New Houses.—The procedure adopted with regard to new houses remains as in previous years, viz., the Borough Surveyor notifies me of the completion of the building. The houses are then examined by my department, and reports thereon made and sent to the Borough Surveyor. 399 new houses were examined during the year, and in all of them the sites were concreted. In 57 cases the drains were unsatisfactory on the first test, and it was necessary that some alteration should be made to them. In 28 cases the closets were of unsatisfactory construction, the defect in the majority of cases being an insufficient area of water in the closet pan. In the tabulated statement on page 112, it states that 98 new houses were without ash receptacles, but this is due to the fact that in these cases the landlords had delayed providing them until the tenants actually came into occupation.

Storage of Household Refuse.—This department of the work has received special care as the importance of cleanly surroundings in the maintenance of

health cannot be over-rated. The large ashpits are gradually disappearing, and being replaced by galvanised ashbins with tight covers. 4,439 visits have been paid for the purpose of inspecting ash receptacles. In 1,546 instances the receptacles were satisfactory, while in 879 instances they were unsatisfactory. It was necessary to issue 688 preliminary and 79 statutory notices to replace unsatisfactory galvanised iron bins.

Formation, Paving, etc., of Streets.—The Borough Surveyor has kindly supplied me with the following list of streets made during 1913:—

11 Front Streets:

Ormond Avenue.
 Wood Park Road.
 Gloucester Avenue.
 Gorse Road (part of).
 Norwood Avenue.
 Highbury Avenue.
 Kensington Road.
 Harley Road (part of).
 Watson's Road, West of Lytham Road.
 King Edward Avenue.
 King George Avenue.

12 Back Streets:

Back St. Paul's Road (N. side).
 Back Street on N. side of No. 63 Ormond Avenue.
 „ „ on W. side of Claremont Avenue.
 „ „ between 242 and 244 Palatine Road.
 „ „ on E. side of No. 16 Adelaide Street.
 „ „ between Nos. 7 and 9 Abingdon Street.
 „ „ between Nos. 26 and 28 Bonny Street.
 „ „ between Nos. 30 and 32 Bonny Street.
 „ „ behind Nos. 2 to 32 Vicarage Lane.
 „ „ between Withnell Road and Station Road.
 „ „ behind Nos. 208 to 254 Palatine Road.
 „ „ between Burlington Road and Rosebery Avenue.

Offensive Trades.—The following exist in the Borough:—

Blood Drier—At Public Slaughter-house ...	1
Tripe Boilers Do. ...	2
Gut Scraper Do. ...	1
Hide, Skin and Fat Depots Do. ...	2
Rag and Bone Depots in the Borough ...	3

It is very satisfactory to note that all the offensive trades, with the exception of the rag and bone depots, are at the abattoirs, where the effluvia emitted from them is not observed by any large body of people. They are also under daily observation by the Caretaker of the abattoirs and the Meat Inspector.

Action has recently been taken by the Corporation with a view of extending the list of offensive trades. Under the Public Health Act 1875, the list of offensive trades included certain specified trades and “Any other noxious or offensive trade,” so that it was left to the Corporation to establish the fact that a given trade, unless specified was offensive. In the Public Health Acts Amendment Act of 1907 the words “Any other noxious or offensive trade” were replaced by the words “Any other trade etc. which the local authority declare by order confirmed by the Local Government Board, etc.”

The Health Committee resolved in July, 1913, that application be made to the Local Government Board for their approval for declaration of the following trades as offensive trades:—Blood drier, tanner, leather dresser, fat melter or fat extractor, glue maker, size maker, gut scraper,

fat dealer, fish frier, manure manufacturer, dealer in rags, bones, hides, skins, carcasses, fat, blood, offal or other like articles, candle maker, bone burner, manufacturer of poultry meal, comprising fish refuse, and crushed bones; bone steamer, fish curer, animal charcoal manufacturer, catgut manufacturer, fish skin dresser, rabbit skin drier, oil distiller and refiner, nettling or chitterling boiler, and swill collecting and boiling.

Considerable correspondence took place with the Local Government Board on this matter, and eventually the following trades were, with their approval, declared offensive:—"Blood drier, tanner, leather dresser, fat melter or fat extractor, glue maker, size maker, gut scraper, fish frier, dealer in rags and bones, and nettling or chitterling boiler." The present position is that before any of these trades' or those specified in the Public Health Act 1875 can be started within Blackpool application has to be made to the Corporation who are empowered to withhold their sanction for the establishment in any neighbourhood which they consider unsuitable.

I much regret the Local Government Board did not sanction the words "dealer in rags and bones" reading "dealer in rags *or* bones." Having regard to the sources from which dealers obtain their rags there cannot be any doubt that they are offensive and a menace to health, and have a markedly deleterious influence upon any neighbourhood where rag stores are set up. It is also very desirable that swill collecting should be scheduled an offensive trade. It is a business widely carried on in Blackpool and a large number of complaints have been received in my office of

the nuisance which arises. It is very desirable that we should be in a position to frame by-laws on this matter, requiring the swill to be collected before a certain time in the morning and in suitable receptacles. It is my intention to recommend the Health Committee to make further representations to the Local Government Board on the question of offensive trades generally.

Common Lodging-houses—Under the Blackpool Improvement Act, 1901, sec. 47, the three common lodging-houses, previously existing were re-registered. These houses, with their accommodation, are as follows:

Eden Street: 160 adults and 1 child.

Seed Street: 56 adults and 1 child.

Gavan Street: 148 adults and 22 married couples, or 217 adults and 1 child.

938 visits of inspection were paid, and it was found on the whole that the lodging-houses were kept in a cleanly condition, and managed satisfactorily. In one instance however I was compelled to administer a warning to one of the proprietors and to inform him that unless an improvement was effected I should recommend the Corporation to refuse renewal of his registration.

Smoke Nuisances.—I am pleased to report that very little trouble was caused during the year by the emission of black smoke. The purity of the atmosphere is, in my opinion, the most important factor in establishing the healthiness of any district, and it is essential that in Blackpool a strict supervision of the methods of consumption of fuel must remain one of the main features of

the work of the Sanitary Authority. In one instance only was the limit of $2\frac{1}{2}$ minutes of black smoke in the half-hour exceeded. The proprietor of the premises, which were brickworks, has promised to carry out certain structural alterations which I trust will obviate the continuance of the nuisance.

Sands Inspections.—I have again to report a very satisfactory condition of the foreshore, and the improvement referred to in my previous report has been well maintained. The screening apparatus at the north and south outfalls are in full working order, and have proved highly satisfactory in so far as the effect in cleansing the sands has been observed by Inspectors of my department. The northerly outfall has been extended for 200 yards, and the extremities of both outfalls are now under water at all states of the tide.

Basement Dwellings.—As regards numbers, these remain as formerly. In my 1910 Report I made a lengthy report on the nature and situation of these dwellings. I consider they are one of the most unsatisfactory features in Blackpool, and I shall not rest satisfied until the Corporation have legal powers to prohibit, except by special registration, the use of basements as tenements. While some of the front basements in houses facing south might be considered somewhat suitable for the purpose, the back basements are very unsuitable, being badly lighted and ventilated. Constant supervision also is necessary to prevent overcrowding and other insanitary conditions arising from the action of the tenants.

Housing and Town Planning Etc. Act.—The following tabular statement, as required under Article V. of the Housing (Inspection of District) Regulations 1910, gives the work done under this Act :—

					RENTAL.	
					£26 per annum and under.	Over £26 per annum.
No. of Dwelling-houses fully inspected	...	217	.....	115		
Do. dangerous or injurious to health as to be unfit for habitation	... ..	Nil	.....	Nil		
Do. found defective but fit for habitation	... ..	208	.....	113		
Do. where defects have been remedied without making Closing Order	... ..	146	.....	89		
Do. still defective	... ..	62	.....	24		
No. of Representations made	... ..	Nil.	.....	Nil		
No. of Closing Orders made	... ..	Nil	.....	Nil		
No. of Dwelling-houses put in habitable condition after Closing Order	... ..	Nil	.....	Nil		

The defects detected are classed under the following heads :—

					£26 per annum and under.	
					Over £26 per annum.	
Defective drains	... ..	173	.....	102		
Defective yard surface	... ..	145	.....	85		
Damp walls	... ..	49	.....	23		
Unventilated rooms	... ..	103	.....	66		
Defective floors	... ..	19	.....	15		
Defective roofs	... ..	44	.....	24		
Defective waterclosets	... ..	65	.....	47		

The defects include those of all degrees, and in many instances more than one defect occurred in each house. The numbers of houses classed as "still defective" must be taken to imply that the defects will be remedied during the early portion of the year 1914.

It will be observed that no houses were in such a state as to be "unfit for human habitation," also that no "unhealthy areas" were observed. It must be borne in mind that the above figures refer only to houses which were completely inspected. In addition to these a very large number of houses were partially inspected, and are referred to in another portion of this report.

General Sanitary Work.—As far as possible the work of the Health Department has been classified under separate headings in the previous pages of this report. The table prepared by the Chief Sanitary Inspector at the end of this portion will reveal a large number of visits paid in other respects also. An aggregate of 2,954 defects were remedied.

Twenty-two defective back streets and two temporary erections have been reported to the Borough Surveyor, and 52 street gullies, 5 sewers, 13 manholes and 10 dirty back streets have been reported to the Cleansing Superintendent as requiring attention.

The number of premises inspected for structural and other defects is as follows ;—

Number of dwelling-houses inspected	...	...	...	1,388
„ „ „ satisfactory	...	...	...	800
„ „ „ unsatisfactory	...	...	...	506
„ „ „ made satisfactory	...	...	...	456
„ „ „ still defective	...	...	...	50
„ „ „ referred for full inspection under the Housing and Town Planning Act	...	...	...	82

1,004 preliminary notices for abatement of nuisances have been served. In 136 of these it was necessary to obtain the sanction of the Corporation to issue subsequent legal notices.

Only three prosecutions were undertaken by the department, two under the Tents, Vans, and Sheds Bye-Laws and one under the Sale of Food and Drugs Acts.

The work of the District Nurse has proceeded during the whole of the year and 3,539 visits were paid by her. Her nursing attentions have been greatly appreciated and it is quite evident that their is work for an additional Nurse.

No further progress has been made with the establishment of a "Day Nursery" for visitors' children. I trust however that the eagerness which was displayed by the Voluntary Committee which had the object in view will soon result in the establishment of an organisation similar to that which is productive of so much good in Southport.

PROSECUTIONS IN 1913.

MONTHS.	ACT.	DETAILS OF OFFENCE.	RESULT.
July	Tents, Vans, and Sheds Bye-Laws.	Failure to provide water supply and sufficient receptacles for refuse.	Fined 2 6 and 8 - cost in each case.
December	Sale of Food and Drugs Acts 1875-1899.	Milk containing 15% added water.	Fined 40/- and 18 6 costs.

CHIEF SANITARY INSPECTOR'S SUMMARY OF WORK IN THE HEALTH DEPARTMENT.

	1912.	1913.
Complaints received	302	196
Visits and Inspections (Total)	22,339	24,397
Number of houses fully inspected	987	859
Number of inspections of works in progress ...	2,943	3,931
Visits to houses and other premises	3,034	3,641
Re-inspections in relation to nuisances under notice	2,153	2,145
Inspections of basements	167	297
Inspections of factories and workshops	660	527
Inspections of bakehouses	283	253
Inspections of common lodging-houses	928	938
Inspections of manure heaps... ..	1,487	946
Sands inspections	264	345
Visits and enquiries in relation to infectious diseases	2,403	2,429
Enquiries into deaths... ..	728	797
Smoke observations (half-hour duration each) ...	8	23
Visits made under Midwives' Act, 1902	74	61
Visits to tents, vans, and sheds	146	176
Inspections of back passages	13	68
Visits to houses where births have occurred ...	2,500	3,252
Visits to houses by District Nurse	3,453	3,539
Inspections of premises re trade refuse	10	19
Manholes inspected	11	70
Visits to outworkers' premises	87	81
Notices Served for the Abatement of Nuisances—		
Statutory	75	136
Preliminary	781	1,004
Verbal	268	303
House Drains Tested— Total number of tests made ...	1,793	1,496
New Houses examined—		
Drains { satisfactory	361	362
{ unsatisfactory on first test	71	57
{ rendered satisfactory after first test ...	67	37

	1912.	1913.
W.C.'s { satisfactory	483	464
{ of defective construction	22	28
Ash receptacles { satisfactory	347	317
{ unsatisfactory	89	98
Site of house { satisfactory	421	342
{ unsatisfactory	—	—
Other Houses { (1st Test) { satisfactory... ..	96	36
Drains } { unsatisfactory	222	212
House drains re-tested during re-laying	690	532
Houses passed off as satisfactory after drainage defects repaired	286	260
Number of houses where sanitary defects were found	1,056	1,318
Number of houses where sanitary defects were remedied	1,447	1,650
Number of sanitary defects remedied	2,517	2,952
Drains—		
Drains laid, re-laid, disconnected, and ventilated	243	225
Drains repaired and cleaned out	659	648
Unsuitable gully traps replaced by properly trapped gullies and new gullies fixed ...	80	48
W.C.'s—		
New w.c.'s fixed in lieu of privies, pail closets, and defective w.c.'s	74	69
Water closets repaired	184	302
Water closets unblocked	38	63
Fittings and water provided for w.c.'s	97	129
W.C. soil pipes repaired and ventilated	44	32
Earth closets provided	—	1
Cesspools and Privies—		
Manure receptacles provided	6	7
Cesspools abolished	—	—
Cesspools provided	—	—
Privies abolished	3	—

	1912.	1913.
Waste Pipes—		
Bath, lavatory, slopstone, and rainwater pipes disconnected over gullies	3	1
Do. do. do. wastepipes trapped	12	12
New slopstone wastepipes fixed	108	217
New rainwater pipes fixed	5	2
Rainwater pipes and roof gutters repaired ...	90	144
Miscellaneous—		
Houses cleansed and limewashed	30	43
Floors re-laid with flags	31	48
Floors re-laid with concrete... ..	43	80
Back yards repaired	157	152
Back yards flagged or concreted	167	124
Back passages cleansed	9	11
Accumulations removed	166	176
Animals removed from improper situations ...	20	18
Roofs repaired... ..	56	121
Rooms ventilated	164	232
Chimneys raised to abate smoke nuisance ...	4	7
Premises closed	—	—
Yards cleansed... ..	23	26
Watercourse cleansed... ..	—	3
Gable end of house cemented	—	4
Overcrowding ceased	1	3
Manhole, &c., sealed (New Houses)	—	4
Manhole benches raised	—	—
Air grids fixed to low ventilating shafts ...	—	—
Number of brackets provided for trade refuse bags	—	—
Number of manholes, &c., reported to Cleansing Superintendent	27	70
Back streets requiring forming reported ...	4	22
Erections in yards, &c., reported	7	2
Letters	2,246	2,592
Infectious Diseases—		
Inquiries into cases of infectious disease (see Visits and Inspections)... ..	—	—

Houses disinfected after cases of infectious diseases	832	1,158
Houses disinfected after cases of consumption ...	105	122
Other premises disinfected	78	67
Isolation notices served upon householders ...	1,039	1,375
Isolation notices served upon School Managers ...	654	904
Isolation notices served upon School Attendance Officers	654	904
Other notices to School Managers with regard to infectious diseases	639	868
Other notices to householders with regard to infectious diseases	639	868
Other notices to School Attendance Officers ...	639	868
Notices to Free Library with regard to infectious diseases	871	1,076

Details of work done in regard to ASH RECEPTACLES during the year 1913.

Total Number of Visits made	4,439
Satisfactory ash receptacles... ..	1,546
Unsatisfactory ash receptacles	879
Re-inspections of houses under notice	2,014

Total Number of Notices served—	Preliminary.	Statutory.
(A) To abolish ashpits	—	—
(B) To repair modified ashpits	110	12
(c) To provide galvanised ashbins... ..	578	67
Total number of modified ashpits repaired... ..	...	66
Total number of ashpits abolished ... ..	...	—
Total number of galvanised ashbins provided ... ..	...	628
Total number of informations laid ... ..	...	393
Total number of modified ash receptacles abolished ... ..	...	16

DISINFECTING DEPARTMENT.

Articles Removed from 315 Houses to Sanatorium for Disinfection:—

Sheets, quilts, blankets, &c.	...	...	...	...	...	...	...	1,991
Articles of clothing	...	...	...	...	...	...	...	3,686
Pillows and bolsters	...	...	...	...	...	...	...	1,224
Beds	...	...	...	...	...	...	...	420
Mattresses	...	...	...	...	...	...	...	247
Carpets	...	...	...	...	...	...	...	371
Rugs and mats...	...	...	...	...	...	...	...	170
Curtains	...	...	...	...	...	...	...	469
Cushions...	...	...	...	...	...	...	...	144
Table cloths	...	...	...	...	...	...	...	65
Books	...	...	...	...	...	...	...	181
Miscellaneous articles...	...	...	...	...	...	...	...	1,136
Articles from Sanatorium	...	...	...	...	...	...	...	2,092
								12,196

T. SANDERSON, Chief Sanitary Inspector.

BLACKPOOL METEOROLOGICAL
OBSERVATORY.



REPORT

AND

RESULTS OF OBSERVATIONS

For the Year 1913.

BLACKPOOL METEOROLOGICAL OBSERVATORY.

Situation.—The new Blackpool Observatory, erected in 1903, is situated in an open field, close by a bridge crossing the railway behind the New Road Cemetery. The sight is about half-a-mile from the Sanatorium site, and is about 70 feet above mean sea level. Its geographical position is, latitude $53^{\circ}49'$ N., longitude $3^{\circ}3'$ W.

Equipment.—The equipment of the department consists of:—

In or on the new Observatory building—

- (i) A Standard Fortin Barometer.
- (ii) A Campbell-Stokes Sunshine Recorder.
- (iii) A Wind Vane and a Patent Pressure Tube Anemometer.
- (iv) A Baxendell's Recording Anemoscope.
- (v) A Recording Barograph.
- (vi) A Micro-barograph.

IN THE GRASS ENCLOSURE.

- (vii) A Stevenson Screen, containing wet and dry bulb and maximum and minimum thermometers.
- (viii) An Earth Thermometer at a depth of four feet.
- (ix) An Earth Thermometer at a depth of one foot.
- (x) A Rain Gauge, 5in. M.O. pattern rim.
- (xi) One Solar Radiation Maximum Thermometer, bright bulb in vacuo.
- (xii) One Solar Radiation Maximum Thermometer, black bulb in vacuo.
- (xiii) One Terrestrial Radiation (or Minimum on Grass) Thermometer.
- (xiv) One Halliwell's Patent Recording Float Pattern Rain Gauge.

Records of meteorological observations have been maintained for 29 years ; and since the observatory was recognised by the Meteorological Office as a Second Order or Normal Climatological Station, observations and records have been taken at 9 a.m., 6 p.m., and 9 p.m. daily.

The Observatory was inspected on June 6th, 1913, by Mr. Dines of the Meteorological Office.

Averages.—The averages used in the preparation of the various tables, unless otherwise mentioned are based upon the observations taken at the new Observatory during the years 1904-1913.

Publication of Observations and Reports.—The arrangement made in May, 1912, with the Meteorological Office for the issue of a daily weather report to the Press has been in operation during the year. The weather reports have been published by the Meteorological Office in the Daily Weather Report, and by the following newspapers or agencies :—London : Times, Morning Post, Express, Standard, Telegraph, Chronicle, News, Morning Leader, Dispatch, Press Association. Provinces : Liverpool Courier, Manchester Courier, Yorkshire Post, Scotsman and Dundee Courier. In addition evening telegrams were sent to the Exchange Telegraph Company, London, Lancashire Daily Post, Burton Daily Mail, Bolton Evening News, Derby Daily Express, Huddersfield Examiner, Halifax Courier, Liverpool Echo, Manchester Evening News, and during the summer to eight other papers.

Weekly and monthly meteorological summaries and sunshine cards were forwarded to the Meteorological

Office during the year, and annual returns of rainfall to the British Rainfall Organisation, as well as monthly returns to the local press.

The autographic records of wind velocity, direction, rainfall, sunshine, etc., and charts showing the variations in atmospheric pressure and temperatures have been exhibited in one of the kiosks on the North Pier.

The duties of Observer have been loyally performed by Mr. H. Smith. Mr. W. Diggle has acted as deputy Observer, and I am indebted to Mr. Berry, the Chief Clerk, for his assistance in the preparation of the report.

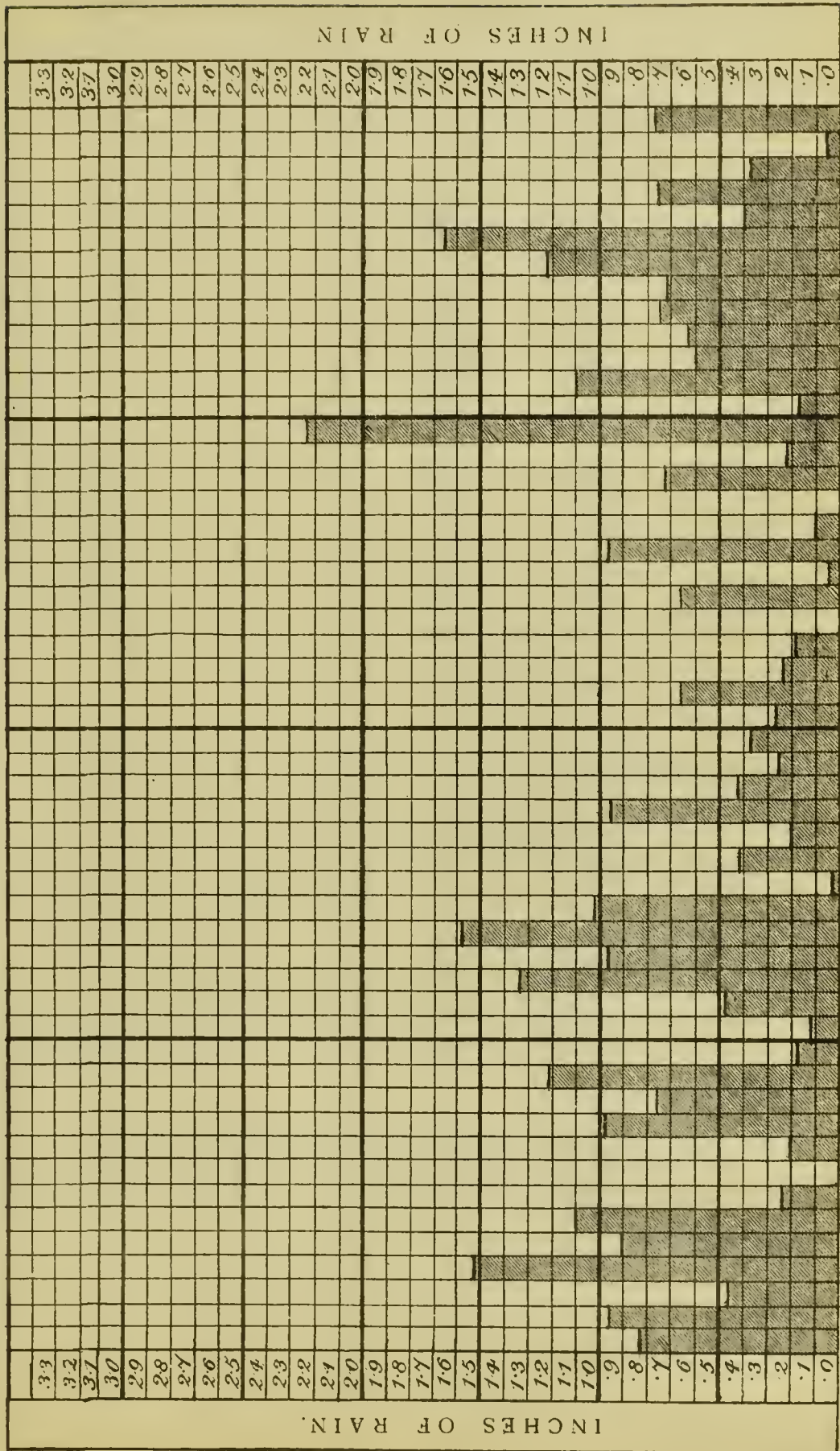
Meteorological Report, 1913.—The weather during the year was mild, fairly dry but dull, especially in the spring solstice. Bright sunshine, although 64 hours in excess of the preceding year, was deficient in ten out of the twelve months of the year. The rainfall was a quarter of an inch below the normal value. Mean shade temperature was above the average, the months of September, October, November and December being very mild.

Bright Sunshine.—Bright sunshine amounted to 1,371·7 hours or 219·5 hours below the average for the years 1904-1913. The daily mean value was 3·76 as compared with 3·68 at Southport, 3·96 at Colwyn Bay, 3·01 at Harrogate, 3·81 at Margate, 3·54 at Scarborough, 4·18 at Torquay, and 4·41 at Eastbourne.

The diurnal amount of bright sunshine and rainfall, and the variations of bright sunshine, rainfall, and temperature from the average values for the years 1904-1913 are given in the following tables :—

CHART IV. (Rainfall in Inches—weekly—1913.)

JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER



DISTRIBUTION OF BRIGHT SUNSHINE, &c.

MONTHS					Bright Sunshine.	Rainfall.	Mean Shade Temperature.
January	...	...	...	...	—21.4	+1.53	—0.1
February	...	...	...	...	—20.9	—0.81	+1.8
March...	...	...	...	...	—15.1	+0.76	+0.7
April	...	...	...	...	—56.6	+1.61	+1.1
May	...	...	...	...	—42.8	+0.16	—0.4
June	...	...	...	...	—29.6	—0.62	+0.5
July	...	...	...	...	—18.4	—1.39	—1.1
August	...	...	...	...	+16.5	—1.58	—0.1
September	...	...	...	...	—15.2	+0.86	+2.5
October	...	...	...	...	—16.1	—0.36	+1.9
November	...	...	...	...	— 6.9	+0.85	+4.5
December	...	...	...	...	+ 6.8	—1.27	+1.7
Year 1913	...	...	...	...	—219.5	—0.26	+1.1
Year 1912	...	...	...	...	—283.3	+5.56	—0.2

+ more than. — less than Average.

There were 290 days (or 79 per cent.) during the year on which bright sunshine was recorded as compared with 282 and 304 days in the two immediately preceding years. There were 75 sunless days

The brightest months were July with 200 hours, August with 199.4 hours, June with 183.7 hours and May with 158.4 hours.

The sunniest days of the year were the 16th May, 1st of June, and 26th July, each with 14 hours.

BRIGHT SUNSHINE IN BLACKPOOL DURING 20 YEARS,
1894—1913.

YEAR.	HOURS.	YEAR.	HOURS.	YEAR.	HOURS.	YEAR.	HOURS.
1894	1310.2	1899	1481.7	1904	1539.1	1909	1654.3
1895	1470.3	1900	1406.1	1905	1757.9	1910	1625.7
1896	1367.2	1901	1687.4	1906	1679.1	1911	1843.8
1897	1485.6	1902	1522.8	1907	1518.8	1912	1307.8
1898	1386.2	1903	1474.2	1908	1615.1	1913	1371.8

Rainfall.—Rain to the amount of one-hundredth of an inch or more fell on 199 days, as against 216 in the year 1912. The total rainfall was 32.69 inches or 0.26 inch below the average for the years 1904-1913.

The months of greatest rainfall were January with 4.30 inches November with 4.07 inches, April with 3.75 inches, March with 3.30 inches, September with 3.22 inches, and October with 3.18 inches. The months of least rainfall were July, with 1.36 inches, and February with 1.48 inches.

Gales.—Only 8 gales occurred during the year. In gusts the highest velocity was 78 miles per hour on the 7th February.

Snow.—Snow fell on 5 days and hail on 17 days.

Fog.—We were free from fogs except on the 12th and 13th February.

Thunderstorms.—Thunderstorms occurred on 10 days.

The comparison figures of three inland stations in Lancashire are produced for comparison.

EXTREMES FOR THE YEAR.

Barometer.—The highest observed reading of the barometer at Blackpool (reduced to 32°F., and mean sea level) was 30·680 inches on the 21st December, and the lowest reading 28·697 on the 19th March, the range of pressure being 1·983 inches. The greatest monthly range of atmospheric pressure, 1·755 inches occurred in March, and the smallest range 0·558 inch in, August.

Temperature—The highest temperature recorded in the shade by the maximum thermometer was 75 degrees on the 17th June and 29th August; the lowest temperature recorded by the shade minimum thermometer was 23 degrees on the 13th and 14th January and 31st December. The highest temperature registered by the black bulb solar radiation thermometer was 127 degrees on the 23rd June, and the lowest temperature recorded on the grass by the terrestrial radiation thermometer was 13 degrees on the 22nd January.

Sunshine.—The greatest duration of sunshine upon one day was 14 hours on the 16th May, 1st June, and 26th July.

Rainfall.—The heaviest daily fall of rain in one day was on the 26th September, when 1·29 inches fell between the hours of 3·45 p.m. to 10·45 p.m. The longest duration of rainfall recorded was from 6·0 a.m. on August 22nd to 3·0 a.m. on August 23rd, *i.e.* :—21 hours continual rainfall.

MAIN FEATURES OF THE MONTHS, 1913.

JANUARY.—Dull and wet. Mean shade temperature was equal to the average. Frost was recorded in the shade on 6 days, and ground frost on 20 days. The lowest temperature on the grass was 13 degrees on the 22nd. Bright sunshine was deficient by 21 hours. The rainfall was $1\frac{1}{2}$ inches in excess of the average. Atmospheric pressure was below normal, and there was an excessive prevalence of high winds. Snow fell on the 11th, 13th, and 22nd, the average depth being 6 inches, 3 inches, and 1 inch respectively. Hail fell on the 21st and 31st. The general direction of the wind was East-South-East.

FEBRUARY.—Unsettled and dull to the 9th, afterwards dry and fairly bright, with the temperature above the normal. Frost was registered in the shade on 4 days, and ground frost on 17 days. There was a deficiency of 21 hours sunshine. The rainfall was 0.81 inch below the average. From the 1st to the 9th atmospheric pressure was low, but during the remainder of the month pressure was high and above the normal. Fog was experienced on two successive days, viz., the 12th and 13th, which is a most unusual occurrence in Blackpool. A gale occurred on the 7th. The prevailing wind was South-East.

MARCH.—Fairly bright, but rather boisterous. Mean shade temperature was 0.7 degree above the normal value. Frost was recorded in the shade on 2 days and ground frost on 12 days. The rainfall exceeded the average by 0.76 inch. Bright sunshine was deficient by 15 hours. Atmospheric pressure was unsettled, and gales occurred on the 5th and 19th. The winds were mainly from the South-West.

APRIL.—Fairly bright and dry to the 8th, afterwards dull and changeable. Mean shade temperature was one degree above the average. Frost was registered in the shade on one day, and ground frost on 8 days. Rainfall was very heavy, being 1.61 inches above the average. The greatest fall was 0.78 inch on the 15th. Bright sunshine was only equal to the amount recorded in March, and was 56 hours below the normal value. Mean atmospheric pressure was a little less than the average value. The winds were chiefly from the South-West. Lightning was seen on the 19th. Snow or hail fell on the 11th, 18th, and 19th.

MAY.—Breezy and dull as compared with many of its predecessors. Bright sunshine was 43 hours below the average, and the rainfall was 0.16 inch in excess of the average. Mean shade temperature was 0.4 degree below normal. Ground frost was registered on 7 days. Mean atmospheric pressure was below normal. The prevailing wind was South-West. Thunder was heard on the 10th and 13th. Lightning was seen on the 8th, hail fell on the 19th, and a gale was experienced on the 8th.

JUNE.—A fairly dry month. Mean shade temperature was normal. Ground frost was recorded on the 2nd. Bright sunshine was deficient by 29 hours. The brightest day was the 1st, with 14 hours' sunshine. There was only one sunless day. The rainfall was below normal by 0.62 inch. Atmospheric pressure was fairly constant. Westerly winds predominated. Slight thunderstorms occurred on the 5th and 17th.

JULY.—Cool, but bright and dry. Mean shade temperature was 1.1 degrees below the average. Bright sunshine amounted to 200 hours, or 18 hours below the local average of 10 years, but 12 hours above the 25 years' average 1881-1905. The brightest day was the 26th, with 14 hours' sunshine. There was only one sunless day. The rainfall was 1.39 inches less than the average. Atmospheric pressure was high and constant. The prevailing wind was North-West.

AUGUST.—Bright and pleasant, with the mean shade temperature at normal. The rainfall was deficient by $1\frac{1}{2}$ inches, and 87% occurred on 3 days. The amount of bright sunshine recorded was 199.4 hours, or 16 hours in excess of the average. The brightest day was the 18th, with 13 hours' sunshine. There were 2 sunless days. Mean atmospheric pressure was high and steady. The general direction of the wind was North-West.

SEPTEMBER.—A calm, warm month, fair at beginning and end of month, but wet during the intervening period, 12th to 26th. Mean shade temperature was 2.5 degrees above the average. Bright sunshine was again deficient by 15 hours. There were 5 sunless days. The rainfall exceeded the normal by 0.86 inch. The greatest fall was

1.29 inches on the 26th; 99% of the rainfall occurred between the 12th and 26th. Pressure was a little below the normal value. The prevailing wind was South-East. Thunder was heard on the 14th.

OCTOBER.—Mild and showery. Mean shade temperature was 1.9 degrees in excess of the average. Ground frost was recorded on 2 days. Bright sunshine, as in the preceding month, was deficient. There were 7 sunless days. The rainfall was 0.36 inch below the average. Mean atmospheric pressure was equal to the average. The general direction of the wind was South-East. Thunderstorms occurred on the 27th, 28th, and 29th.

NOVEMBER.—Unusually mild and breezy; with frequent falls of rain and intervals of brilliant sunshine. Mean shade temperature was $4\frac{1}{2}$ degrees above the average. Ground frost was only registered on 3 days. Bright sunshine was deficient by 7 hours. The rainfall was 0.85 inch above the average. Atmospheric pressure was irregular, and gales were experienced on the 2nd and 18th, when the maximum gust reached 64 miles per hour. The prevailing wind was West.

DECEMBER.—Mild, bright, and dry. Bright sunshine exceeded the average by 6.8 hours, and the rainfall was deficient by 1.27 inches. Mean shade temperature was 1.7 degrees above the average. Frost was recorded in shade on 2 days, and ground frost on 6 days. Atmospheric pressure was high during the greater part of the month, but depressions occurred between the 2nd and 6th, and again between the 23rd and 29th. Gales were experienced on the 3rd and 26th; the maximum gust on the 3rd reached 71 miles per hour. The wind was chiefly West.

BAROMETRIC PRESSURE* corrected to 32°F.
and mean sea level.

1913.	Mean Pressure.	Difference from Average 10 years 1904-1913.	Highest.	Lowest.	Observed Monthly Range.
January	29.712	- .298	30.392	28.978	1.414
February	30.136	+ .244	30.679	29.472	1.207
March	29.759	- .092	30.452	28.697	1.755
April	29.825	- .103	30.290	29.146	1.144
May	29.891	- .061	30.324	29.488	0.836
June	30.055	+ .088	30.408	29.655	0.753
July	30.085	+ .039	30.384	29.770	0.614
August	30.079	+ .158	30.324	29.766	0.558
September	29.980	- .093	30.472	29.158	1.314
October	29.832	- .064	30.356	29.080	1.276
November	29.800	- .053	30.399	29.058	1.341
December	30.068	+ .246	30.680	29.003	1.677
Means	29.935	+ 0.004	30.680	28.697	1.157

*From observations at 9-0 a.m. and 9-0 p.m. daily.

TEMPERATURE—Stevenson Screen Results.
(IN DEGREES FAHRENHEIT).

1913.	Mean Maxi- mum.	Mean Mini- mum	Mean Temp *	Differ- ence from Average 1904-13.	Mean Daily Range	Absolute extremes.			
						High- est.	Date	Low- est.	Date
January	43.0	34.8	38.9	- 0.1	8.2	52°	7th	23°	13 & 14th
February	46.0	36.3	41.2	+ 1.8	9.7	52°	7, 11, 25th	27°	19th
March	47.8	36.8	42.3	+ 0.7	11.0	56°	31st	25°	18th
April	52.3	40.0	46.2	+ 1.1	12.3	63°	24th	30°	12th
May	57.2	43.6	50.4	- 0.4	13.6	74°	30th	33°	16th
June	62.3	50.3	56.3	+ 0.5	12.0	75°	17th	42°	2nd
July	63.6	52.3	58.0	- 1.1	11.3	72°	30th	43°	8th
August	65.5	51.5	58.5	- 0.1	14.0	75°	29th	39°	19th
September	64.5	50.2	57.4	+ 2.5	14.3	72°	24th	39°	8th
October	57.3	46.3	51.8	+ 1.9	11.0	66°	1st	33°	24th
November	51.9	43.7	47.8	+ 4.5	8.2	56°	2nd & 17th	35°	9th
December	46.1	39.7	42.9	+ 1.7	6.4	53°	3rd	23°	31st
Means	54.8	43.8	49.3	+ 1.1	11.0	High- est 75°	June 17th and Aug 29th	Low- est 23°	Jan. 13th & 14th, Dec. 31st

* Mean of the daily indications (each for the 24 hours ending 9-0 p.m.) of the maximum and minimum thermometers in the screen.

HUMIDITY,

1913	9 a.m. Readings.			Elastic Force of Aqueous Vapour.	Mean relative humidity.	Differ- ence from Average at 9 a.m. 10 years (1904-1913).
	Dry Bulb	Wet Bulb	Dew point.		9 a.m.	
January	38.7	37.7	36.4	.221	91.6	+1.1
February	41.2	39.4	37.2	.226	86.3	-2.8
March	43.5	41.4	38.7	.240	83.4	-1.4
April	47.4	45.2	42.8	.279	84.7	+4.6
May	52.9	50.5	48.2	.342	84.4	+3.7
June	58.0	54.2	50.8	.376	77.8	-1.0
July	59.9	55.8	52.2	.395	76.6	-2.9
August	61.0	56.6	52.8	.404	74.9	-6.6
September	59.0	55.4	52.2	.394	79.0	-2.8
October	53.3	50.2	47.2	.330	80.4	-4.9
November	48.8	46.7	44.4	.296	85.1	-2.9
December	42.6	41.1	39.1	.246	87.6	-2.8
Means	50.5	47.9	48.5	.312	82.7	-1.5

HUMIDITY,

1913	9 p.m. Readings.			Elastic Force of Aqueous Vapour.	Mean relative humidity.	Differ- ence from average 10 years 1904-1913
	Dry Bulb	Wet Bulb	Dew Point.		9 p.m.	
January	38.4	37.6	36.5	.220	92.6	+1.6
February	40.1	38.7	36.7	.223	88.0	-2.2
March	41.3	40.2	38.8	.240	91.0	+0.6
April	44.2	43.1	41.8	.269	91.6	+4.7
May	48.7	47.7	46.5	.329	92.5	+3.8
June	54.2	52.2	50.2	.367	86.7	-1.4
July	56.5	54.5	52.7	.402	87.5	-0.2
August	57.2	54.7	52.5	.399	84.4	-3.2
September	55.6	53.9	52.2	.396	88.6	-1.0
October	50.4	49.1	47.7	.336	90.7	+0.1
November	46.9	45.6	44.1	.294	90.0	-0.9
December	42.8	41.5	39.9	.251	89.5	-1.9
Means	48.0	46.6	45.0	.311	89.4	0.0

TEMPERATURE EXTREMES, SOLAR AND TERRESTRIAL RADIATION.

1913	Black Bulb in vacuo.		Bright Bulb in vacuo.		Minimum on grass.	
	Highest	Date.	Highest.	Date.	Lowest	Date.
January	75	25th	56	24th	13	22nd
February	90	27th	64	25th	16	19th
March	104	11 & 29th	76	24th	14	18th
April	114	10th	80	24th	19	13th
May	130	30th	99	30th	22	16th
June	127	23rd	93	4th	29	2nd
July	124	11, 18, 22nd	90	25th	40	1st
August	125	6th	90	3rd & 29th	35	5, 8th, 20th
September	122	6th & 7th	88	6th	29	7th
October	110	1st	81	1st	27	24th
November	93	5th	68	2nd	29	9th
December	81	1st	59	1st	18	31st
Year	127	June 23rd	99	May 30th	13	January 22nd

UNDERGROUND TEMPERATURES, AND SOLAR AND TERRESTRIAL RADIATION.

1913	Mean Underground at 9 a.m.		* Difference from Average 10 years (1904-1913)	Mean Daily Max. Temp. in Sun.		Mean excess of Black Bulb in vacuo over Bright Bulb in vacuo	Mean Daily Minimum on short Grass
	1 foot.	4 feet. *		Black Bulb in vacuo	Bright Bulb in vacuo		
January ..	40.4	45.2	+1.5	57.1	46.5	10.6	29.0
February ..	40.7	43.6	+1.4	70.1	53.9	16.2	28.9
March ..	41.9	43.7	+1.1	87.2	61.6	25.6	30.9
April ..	45.4	44.8	+0.1	96.5	67.2	29.3	33.8
May ..	50.2	47.5	-0.6	103.7	73.6	30.1	36.8
June ..	56.9	51.7	-0.9	114.0	80.6	33.4	46.6
July ..	58.5	54.0	-1.7	117.2	82.9	34.3	50.6
August ..	59.6	55.7	-1.1	113.2	82.6	30.6	48.4
September ..	57.0	55.7	-0.1	103.2	78.0	25.2	45.4
October ..	52.9	54.2	+0.8	86.3	66.6	19.7	41.8
November ..	48.2	51.1	+1.7	73.0	53.1	14.9	39.7
December ..	44.9	48.7	+2.6	58.3	48.6	9.7	35.6
Means ..	49.7	49.7	+0.4	90.0	66.7	23.3	39.0

DURATION OF BRIGHT SUNSHINE AND AMOUNT OF CLOUD.

1913			Campbell-Stokes Recorder.				Cloud.	
			Total Bright Sunshine. Hours	Difference from Average 10 years (1904-19 3)	Most Sunshine in One Day.		Numb'r of Sunless Days.	9 a.m. 9 p.m.
					Amount Hours.	Date.		
January	..	..	26.6	—21.4	4.5	25th	15	8.5 7.7
February	..	..	58.6	—20.9	6.5	19th	9	7.8 7.4
March	..	..	117.3	—15.1	8.1	25th	3	8.1 7.8
April	..	..	117.5	—56.6	10.7	20th	2	8.5 8.0
May	..	..	158.4	—42.8	14.0	16th	5	8.3 6.8
June	..	..	183.7	—29.6	14.0	1st	1	7.3 8.0
July	..	..	200.0	—18.4	14.0	26th	1	7.1 7.6
August	..	..	199.4	+16.5	13.0	18th	2	6.3 5.7
September	..	..	128.2	—15.2	10.9	3rd	5	8.2 7.1
October	..	..	85.8	—16.1	8.4	22nd	7	7.7 8.1
November	..	..	52.5	— 6.9	6.2	9th	8	8.2 7.4
December	..	..	43.8	+ 6.8	6.2	30th	17	8.5 7.8
Totals	..	..	1371.8	—219.5	14.0	May 16th June 1st July 26th	75	7.9 7.5

RAINFALL.

1913.			Total Rainfall. *	Difference from Average 10 years (1904-1913)	Number of days with 0.01 in. or more.	Greatest fall in one day.†	
						Amount.	Date.
			Inches.	Inches.		Inches.	
January	..	..	4.30	+1.53	18	0.82	23rd
February	..	..	1.48	—0.81	11	0.33	6th
March	..	..	3.30	+0.76	22	0.48	22nd
April	..	..	3.75	+1.61	19	0.78	15th
May	..	..	2.31	+0.16	19	0.64	3rd
June	..	..	1.99	—0.62	15	0.38	7th
July	..	..	1.36	—1.39	11	0.43	6th
August	..	..	1.79	—1.58	7	0.67	8th
September	..	..	3.22	+0.86	13	1.29	26th
October	..	..	3.18	—0.36	20	0.47	7th
November	..	..	4.07	+0.85	27	0.95	20th
December	..	..	1.94	—1.27	17	0.43	26th
Totals	..	..	32.69	—0.26	199	1.29	Sept. 26th

* From 9 a.m. on the 1st, including each month the fall during the first nine hours of the succeeding month.

† 24 hours ending 9 a.m. next day.

FORCE AND MOVEMENT OF THE WIND.

AS RECORDED BY THE DINES' RECORDING PRESSURE TUBE ANEMOMETER.

1913	Mean Daily Move- ment.	Absol. Max. for one hour.	Date.	Rate in Max. Gust.	Date.	Gales occurred on these dates.
January ..	Miles 363	Miles 34	31st	Miles 54	30th	—
February ..	350	52	7th	78	7th	7th
March ..	435	41	6th	61	19th	5th & 9th
April ..	350	35	5th	53	5th	—
May ..	304	39	8th	59	8th	8th
June ..	346	38	9th	58	9th	—
July ..	264	26	19th	37	19th	—
August ..	243	25	24th	40	23rd	—
September	252	25	12th	42	12th	—
October ..	298	27	6th	43	29th	—
November	420	45	18th	64	2 & 18th	2nd & 18th
December	399	47	3rd	71	3rd	3rd & 26th
Means ..	339	52	Feb. 7th	78	Feb. 7th	Total 8.

DIRECTION OF WIND AT BLACKPOOL DURING 1913.

OBSERVATIONS 4 TIMES DAILY, AT 9.0 A.M., 1 p.m. 6.0 P.M., AND 9 P.M.

1913	N	N.N.E.	N.E.	E.N.E.	E.	E.S.E.	S.E.	S.S.E.	S.	S.S.W.	S.W.	W.S.W.	W.	W.N.W.	N.W.	N.N.W.	Calm	No. of Observa- tions.
January ..	8	1	—	1	8	26	28	25	1	2	8	7	6	1	—	2	—	124
February ..	1	2	8	3	17	4	15	9	7	4	18	5	3	4	8	1	3	112
March ..	3	1	1	1	11	2	7	13	8	13	31	13	12	3	4	1	—	124
April ..	1	6	9	3	11	4	10	9	10	12	14	5	9	6	5	4	2	120
May ..	1	2	7	—	10	5	14	3	6	3	18	15	11	12	11	5	1	124
June ..	3	—	—	—	4	3	5	7	1	9	4	11	32	15	19	6	1	120
July ..	4	4	5	—	13	3	6	3	1	—	5	10	18	11	34	7	—	124
August ..	3	6	6	3	16	1	4	2	3	3	6	10	15	13	24	8	1	124
September	4	7	11	17	15	7	22	7	4	1	5	2	8	2	4	4	—	120
October ..	—	2	14	11	16	6	26	17	9	1	12	3	—	2	5	—	—	124
November	—	—	3	—	3	3	13	13	6	6	21	10	30	2	8	2	—	120
December	6	12	3	1	5	1	4	—	3	5	20	11	31	6	8	8	—	124
Totals ..	34	43	67	40	129	65	154	108	59	59	162	102	175	77	130	48	8	1460

APPENDIX TABLES.

TABLE I. (Local Government Board.)
Vital Statistics of whole district during 1913 and previous years.

YEAR.	Population Estimated to Middle of each year.	BIRTHS.			Total Deaths Registered in the District.		Transferable Deaths.		NETT DEATHS BELONGING TO THE DISTRICT.			
		Uncor- rected Number.	Nett.		No.	Rate	Of Non- residents Registered in the District.	Of Resi- dents not Registered in the District.	Under one year of age.		At all ages.	
			No.	Rate					No.	Rate per 1,000 Nett Births	No.	Rate
1	2	3	4	5	6	7	8	9	10	11	12	13
1908	59,741	1,032	1,048	17.54	847	14.18	120	34	134	127.86	761	12.74
1909	61,450	1,009	1,026	16.70	833	13.56	85	31	106	103.31	779	12.68
1910	60,113	988	1,006	16.74	704	11.71	68	50	105	104.37	686	11.41
1911	61,052	953	975	15.97	853	13.97	122	80	123	126.15	811	13.28
1912	62,125	947	963	15.50	789	12.70	105	69	85	88.26	753	12.12
1913	64,186	1,024	1,043	16.25	950	14.80	121	85	131	125.60	914	14.24

Area of District, 3,522 acres. 1911 Census: Population 58,371. Number of inhabited houses, 13,149.
Average number persons per house, 4.439.

WEEKLY INCIDENCE OF INFECTIOUS DISEASE, AND TOTAL AND INFANTILE DEATHS, 1913.

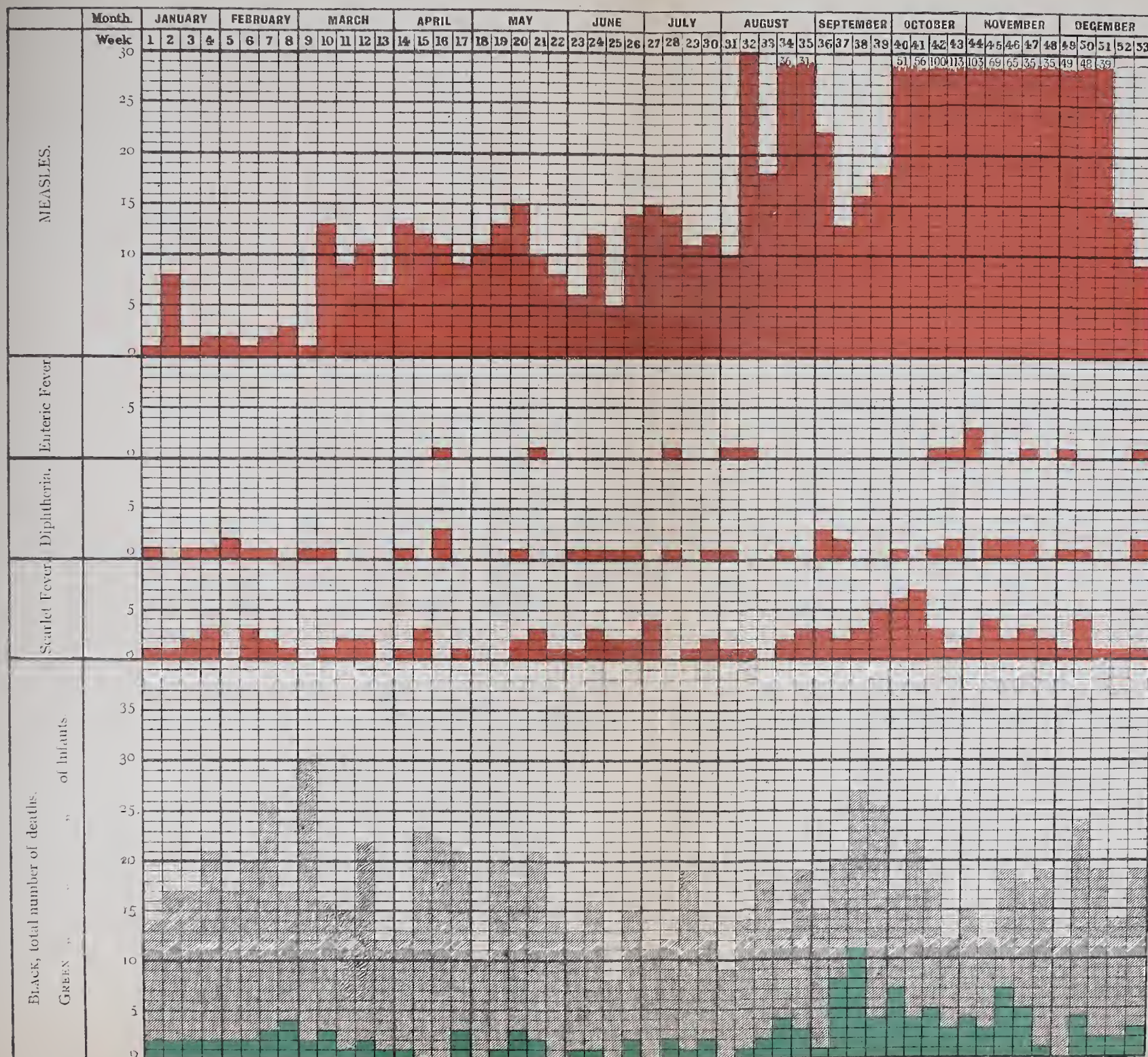


TABLE II. (Local Government Board.)
Cases of Infectious Disease notified during the year 1913.

NOTIFIABLE DISEASE.	NUMBER OF CASES NOTIFIED							TOTAL CASES NOTIFIED IN EACH LOCALITY (e.g. Parish or Ward) of the District							Total Cases Removed to Hospital
	At all Ages.	At Ages—Years						Claremont Ward	Talbot Ward (H)	Bank Hey Ward	Brunswick Ward	Foxhall Ward	Waterloo Ward		
		Under 1	1 to 5	5 to 15	15 to 25	25 to 45	45 to 65							65 and upwards.	
Smallpox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cholera	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Plague.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diphtheria (including Membranous Croup) ...	41	—	9	31	—	1	—	6	6	2	3	19	5	31	—
Brysipelas	24	—	—	—	3	10	8	3	3	—	3	10	2	1	—
Scarlet Fever	102	—	23	70	6	3	—	21	27	3	13	33	5	91	—
Typhus Fever.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric Fever	13	—	1	2	2	7	1	4	6	—	—	—	3	11	—
Relapsing Fever.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Continued Fever.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal Fever.....	5	—	—	—	1	4	—	—	2	—	—	3	—	4	—
Cerebro-spinal Meningitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Polio-myelitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pulmonary Tuberculosis...	131	—	1	11	32	65	21	23	27	5	15	45	16	52	—
Other forms of Tuberculosis	46	—	9	14	8	11	4	11	6	—	2	19	8	—	—
Measles	1232	48	525	623	22	14	—	208	382	14	154	344	130	51	—
Totals	1594	48	568	751	74	115	34	279	459	24	190	473	169	241	—

NOTE—Mark (H) is the locality in which the Blackpool Corporation Isolation Hospital is situated.

Name of Hospital :—Blackpool Sanatorium, New Road, Blackpool.

TABLE III. (Local Government Board.)
Causes of, and Ages at, death during year 1913.

Causes of Death	Nett Deaths at the subjoined ages of "Residents" whether occurring within or without the District									Total Deaths whether of "Residents" or "Non-Residents" in Institutions in the District.
	All ages.	Under 1 year.	1 and under 2.	2 and under 5	5 and under 15.	15 and under 25.	25 and under 45.	45 and under 65	65 and upwards	
All Causes, certified	890	129	31	29	27	29	106	262	277	66
Uncertified	24	2	—	—	—	—	4	10	8	—
Enteric Fever	1	—	—	—	1	—	—	—	—	—
Small Pox	—	—	—	—	—	—	—	—	—	—
Measles	13	3	5	5	—	—	—	—	—	—
Scarlet Fever	2	—	—	1	1	—	—	—	—	2
Whooping Cough... ..	5	3	1	1	—	—	—	—	—	—
Diphtheria and Croup	6	—	—	3	3	—	—	—	—	6
Influenza	13	2	—	—	—	—	3	5	3	—
Erysipelas	—	—	—	—	—	—	—	—	—	—
Phthisis (Pulmonary Tuberculosis)	49	—	—	1	1	14	18	13	2	6
Tuberculous Meningitis	6	—	2	2	1	1	—	—	—	1
Other Tuberculous Diseases	16	1	1	2	2	2	5	3	—	3
Cancer, malignant disease	92	—	—	—	—	—	7	46	39	5
Rheumatic Fever... ..	4	—	—	—	1	—	2	—	1	1
Meningitis	7	2	1	2	2	—	—	—	—	—
Organic Heart Disease	86	—	—	—	1	1	12	43	29	3
Bronchitis	69	6	3	1	—	1	1	15	42	—
Pneumonia (all forms)	50	10	5	5	1	5	10	9	5	3
Other diseases of Respiratory organs	10	—	—	1	—	—	2	4	3	1
Diarrhœa and Enteritis	45	30	6	1	—	—	2	3	3	2
Appendicitis and Typhlitis... ..	7	—	—	1	4	2	—	—	—	5
Cirrhosis of Liver	13	—	—	—	—	—	—	12	1	—
Alcoholism	—	—	—	—	—	—	—	—	—	—
Nephritis and Bright's Disease... ..	37	—	—	1	3	1	5	20	7	3
Puerperal Fever	1	—	—	—	—	—	1	—	—	—
Other accidents and diseases of Pregnancy and Parturition	4	—	—	—	—	—	4	—	—	—
Congenital Debility and Malformation, including Premature Birth	49	47	2	—	—	—	—	—	—	—
Violent Deaths, excluding Suicide	14	1	1	—	—	1	6	5	—	4
Suicides	7	—	—	—	—	—	3	4	—	1
Other Defined Diseases	281	25	4	1	6	1	24	76	144	19
Diseases ill-defined or unknown	27	1	—	1	—	—	5	14	6	1
	914	131	31	29	27	29	110	272	285	66

Cerebro-spinal Meningitis and Poliomyelitis, Nil.

TABLE IV. (Local Government Board.)

Infant Mortality during the Year 1913.

Nett Deaths from stated causes at various ages under One Year of age.

CAUSE OF DEATH.	Under 1 Week	1-2 Weeks	2-3 Weeks	3-4 Weeks	Total under 4 Weeks	4 Weeks and under 3 Months	3 Months and under 6 Months	6 Months and under 9 Months	9 Months and under 12 Months	Total Deaths under 1 year.
ALL CAUSES.										
Certified.....	34	4	3	6	47	33	23	12	14	129
Uncertified	1	...	...	...	1	...	...	1	...	2
Small Pox .. ...	...	...	...	...	...	...	...	...	...	...
Chicken Pox .. ...	...	...	...	...	...	...	...	...	...	...
Measles .. ...	...	...	...	...	...	...	...	...	3	3
Scarlet Fever .. ...	...	...	...	...	...	...	...	...	...	...
Whooping Cough .. ...	...	...	...	...	...	1	...	2	...	3
Diphtheria and Croup .. ...	...	...	...	...	...	...	...	...	...	...
Erysipelas .. ...	...	...	...	...	...	...	...	...	...	...
Tuberculous Meningitis .. ...	...	...	...	...	...	...	...	...	...	...
Abdominal Tuberculosis .. ...	...	...	...	...	...	...	1	...	...	1
Other Tuberculous Diseases .. ...	...	...	...	...	...	...	...	...	...	...
Meningitis (<i>not Tuberculous</i>)	1	...	...	...	1	1	...	...	...	2
Convulsions	2	...	...	...	2	3	1	2	...	8
Laryngitis .. ...	...	...	...	...	...	...	...	...	...	...
Bronchitis .. ...	...	...	1	...	1	3	...	...	2	6
Pneumonia (all forms) .. ...	...	1	...	1	2	1	3	...	4	10
Diarrhœa .. ...	...	...	1	1	2	5	5	5	2	19
Enteritis .. ...	...	...	1	...	1	...	6	2	2	11
Gastritis .. ...	...	...	...	1	1	1	1	...	...	3
Syphilis .. ...	...	...	...	1	1	1	1	1	1	5
Rickets .. ...	...	...	...	...	...	...	...	...	...	...
Suffocation (overlying) .. ...	...	...	...	...	...	...	...	...	...	...
Injury at Birth	3	1	...	...	4	...	...	...	...	4
Atelectasis .. ...	...	...	...	...	...	...	...	...	...	...
Congenital Malform'tions	3	1	...	...	4	2	...	...	...	6
Premature Birth	23	1	...	1	25	3	...	...	...	28
Atrophy, Debility, and Marasmus... ..	2	...	...	...	2	8	3	...	...	13
Other Causes	1	...	...	1	2	4	2	1	...	9
TOTALS...	35	4	3	6	48	33	23	13	14	131

Nett BIRTHS in the Year—Legitimate 959. Illegitimate 84.

Nett DEATHS in the Year—Legitimate Infants 116; Illegitimate Infants 15.

TABLE VI.

Table giving the total number of Births and Deaths with their corresponding rates in each quarter of the year 1913:

Quarter ending.	Births.	Birth Rate.	Deaths.	Death Rate.	Deaths under one year.	Infant Mortality.
March 29th	251	15·69	244	15·26	28	111.11
June 28th	268	16 76	214	13·38	13	48.51
September 27th	255	15·95	216	13·51	39	152.94
January 3rd, 1914	269	15·62	240	13·93	51	189.59
Year	1043	16·25	914	14.24	131	125.6

TABLE VII.

Showing the proportion of deaths of children under one, of children under five, and of persons over 65 years of age, to total deaths.

YEAR.	NUMBER OF DEATHS			PERCENTAGE OF TOTAL DEATHS OF DEATHS		
	Total Deaths	Under one year of age.	Under five years of age	Under one year of age.	Under five years of age	65 years of age
1893	421	123	158	29.22	37.53	18.05
1894	361	96	134	26.59	37.12	18.84
1895	538	169	232	31.41	43.12	17.47
1896	507	137	182	27.02	35.90	23.08
1897	614	178	249	28.99	40.55	18.73
1898	629	206	260	32.75	41.34	19.08
1899	712	228	289	32.02	40.59	17.42
1900	720	189	251	26.25	34.86	20.00
1901	716	181	251	25.28	35.06	18.85
1902	679	148	208	21.80	30.63	19.44
1903	683	158	212	23.13	31.04	23.28
1904	674	188	251	27.89	37.24	19.29
1905	680	144	197	21.18	28.97	23.24
1906	703	134	192	19.06	27.31	24.32
1907	677	117	162	17.28	23.93	27.77
1908	761	134	183	17.61	24.05	28.65
1909	779	106	156	13.61	20.03	28.63
1910	686	105	150	15.31	21.87	31.34
1911	811	123	173	15.17	21.33	29.59
1912	753	85	115	11.29	15.27	34.93
1913	914	131	191	14.33	20.89	31.18

TABLE VIII.

Birth, Death and Infant Mortality Rates.

			Rate per 1,000.			Total Births.	Total Deaths.	Total Infant Mortality
		Estimated Population.	Births.	Deaths.	Deaths Corrected for Age and Sex Distribution.			
1891..	..	25,310	22.3	18.2	20.56	566	461	182
1892..	..	26,740	24.0	15.29	17.26	642	409	143
1893..	..	28,389	22.4	14.86	16.78	638	421	193
1894..	..	30,337	23.9	11.9	13.44	726	361	132
1895..	..	32,943	26.7	16.33	18.44	882	538	192
1896..	..	36,638	25.7	13.84	15.63	940	507	146
1897..	..	40,234	26.25	15.26	17.23	1,056	614	169
1898..	..	45,414	27.74	13.85	15.64	1,260	629	163
1899..	..	48,200	27.34	14.77	16.68	1,318	712	173
1900..	..	50,166	25.27	14.35	16.20	1,268	720	149
1901..	..	50,750	22.90	14.11	15.42	1,162	716	156
1902..	..	52,174	23.96	13.01	14.22	1,250	679	118
1903..	..	53,015	22.97	12.88	14.08	1,218	683	130
1904..	..	54,388	21.53	12.40	13.55	1,170	674	161
1905..	..	55,712	20.30	12.21	13.35	1,131	680	127
1906..	..	57,115	17.91	12.31	13.45	1,023	703	131
1907..	..	58,431	18.09	11.59	12.67	1,057	677	111
1908..	..	59,741	17.54	12.74	13.92	1,048	761	128
1909..	..	61,450	16.70	12.68	13.86	1,026	779	103
1910..	..	60,113	16.74	11.41	12.47	1,006	686	104
1911..	..	61,052	15.97	13.28	13.31	975	811	126
1912..	..	62,125	15.50	12.12	12.14	963	753	88
1913..	..	64,186	16.25	14.24	14.27	1,043	914	131

(Tables in this Report refer to resident deaths, etc , only).

